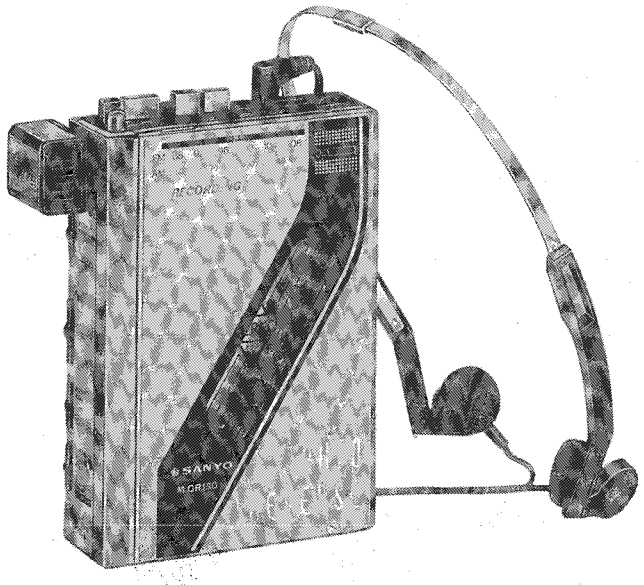
SERVICE MANUAL

SANYO

MINI AM/FM STEREO RADIO CASSETTE PLAYER/RECORDER WITH AUTO REVERSE

MGR150
(EUROPE)



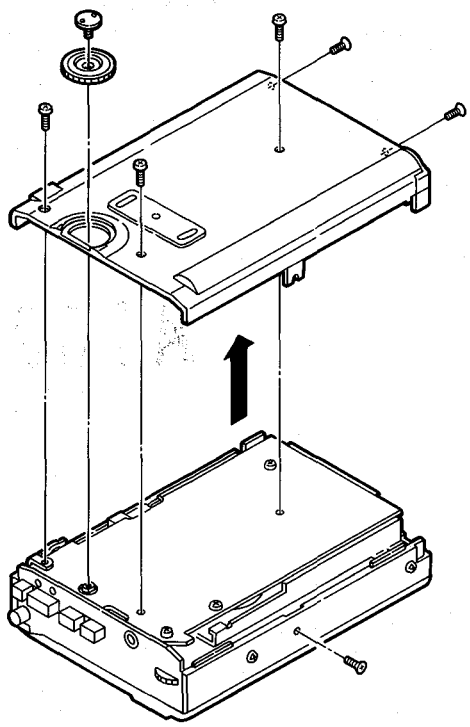
SPECIFICATIONS

Recording system	AC bias, 4-track stereo
Erasing system	Magent erasing, 2-track
Tape speed	4.75 cm/sec. (1-7/8 i.p.s.)
Rewind and fast forward time	2 min. 35 sec. (C-60)
Frequency range	AM: 530 – 1,605 kHz FM: 87.5 – 108 MHz
Terminal impedance	MIC: 1 kohms PHONES: 32 ohms
Frequency response	40 – 14,000 Hz (Normal) 40 – 14,000 Hz (CrO_2) 40 – 16,000 Hz (Metal)
Output power	20 mW (max.)
Power source	DC: 3V, "R6" type (AA) x 2 AC adaptor (3CV230, optional) Car battery adaptor (CA30, optional)
Dimensions	80 (W) x 29.3 (D) x 113 (H) mm
Weight	Approx. 310 g including batteries

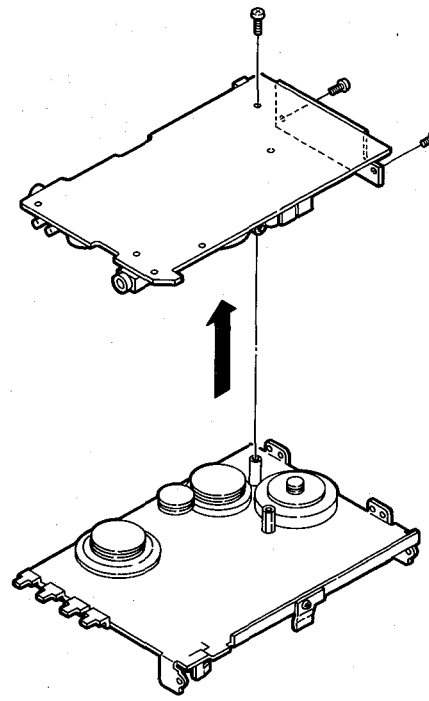
* Specifications subject to change without notice.

DISASSEMBLY

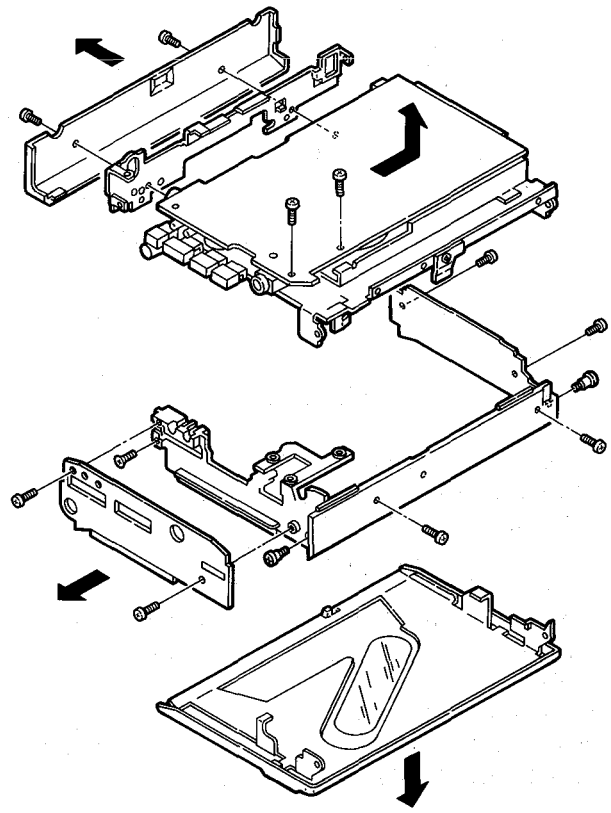
1. BACK LID REMOVAL



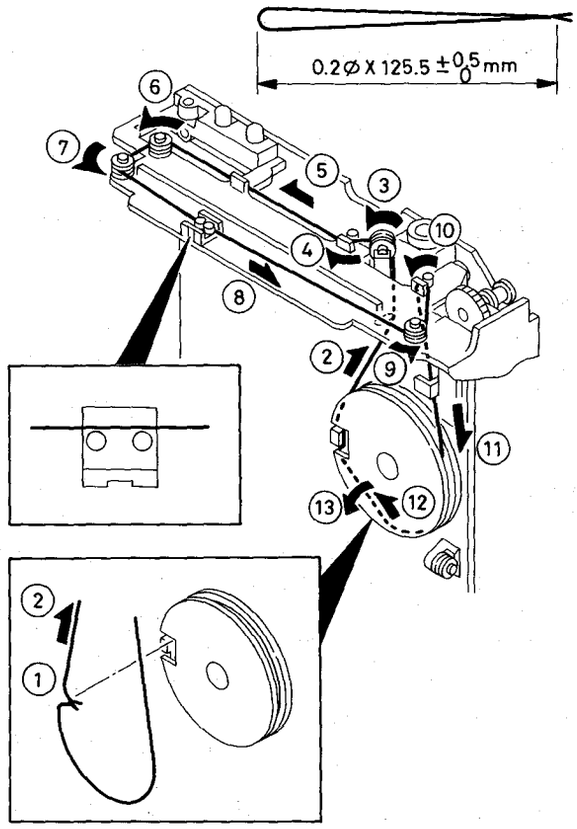
3. P.C.B REMOVAL

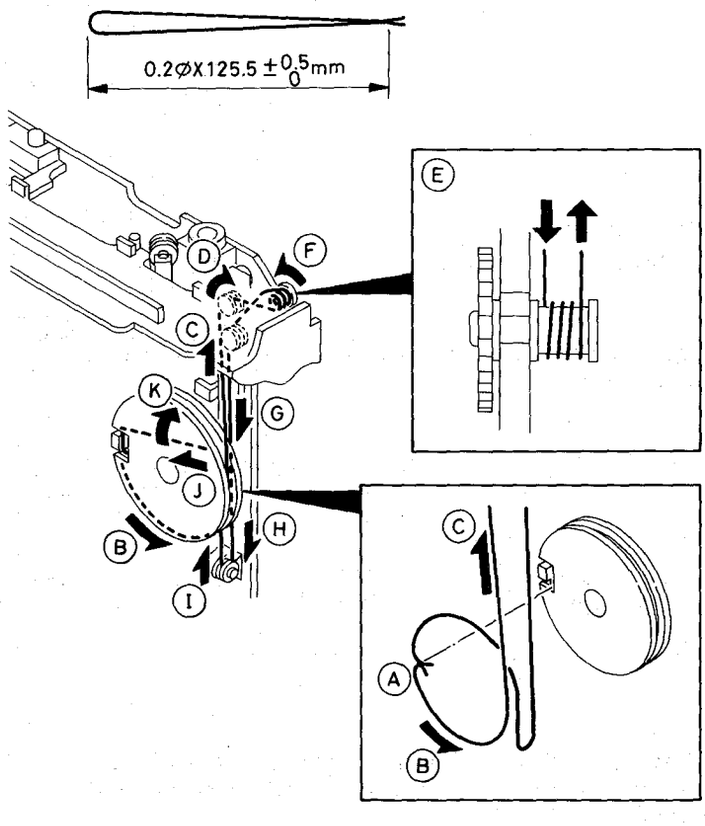


2. CHASSIS REMOVAL



DIAL CORD STRINGING





TUNER ADJUSTMENT

Adjustment of tuner unit

The supply voltage is 3 volts DC, the speaker impedance is 32 ohms, and the standard output (1.25m watts) is 0.2 volts.

AM		Test point (input)	Test point (output)	Adjusting frequency	Adjusting position	Remarks
Intermediate frequency		TP3 (IC301⑨) TP4 (IC301⑧)	Stereo earphone terminal	460 kHz	T303 T304	VTVM maximum
Coverage frequency	LOW	Loop Ant.	Same as above	517 kHz	L108	VTVM maximum
	HIGH			1660 kHz	CT006	
Tracking frequency	LOW	Same as above	Same as above	600 kHz	L107	VTVM maximum
	HIGH			1400 kHz	CT005	

FM		Test point (input)	Test point (output)	Adjusting frequency		Adjusting position	Remarks
Intermediate frequency		TP1 (IC101①) TP2 (VC earth)	TP3 (IC301⑨) TP4 (IC301⑧)	10.7 MHz	V-curve	T301	See Fig. 1.
					S-curve	T302	See Fig. 2.
Coverage frequency	LOW	Same as above	Stereo earphone terminal	$87.4\ ^{+0.1}_{-0.15}$ MHz		L105	VTVM maximum
	HIGH			108.5 ± 0.3 MHz		CT003	
Tracking frequency	LOW	Same as above	Same as above	90 MHz		L103	VTVM maximum
	HIGH			106 MHz		CT001	

- Cautions for adjustment of FM intermediate frequency

(1) Feed signal by cutting off the DC portion from the sweep generator through the 2.2μF/50V electrolytic capacitor.
(2) For V-curve adjustment, deviate the T302 in pulling-out direction, and adjust with T301.

Adjustment of FM MPX unit

(1) Band selector: FM ST.
(2) FM SG: Pilot signal (19 kHz) . . . 7.5 kHz dev. (10% mod.)
Stereo signal . . . at MAIN, 22.5 kHz dev. (30% mod.); modulation frequency is 1,000 Hz, to be tuned at 83 MHz, 60 dB.

By connecting test points TP5 (H), TP6 (G), adjust SVR501 so that the frequency counter indicates 19000 Hz ± 100 Hz.

FM-MPX ADJUSTMENT

This adjustment should be after adjustment of FM Tuner.
Volume ..... Standard output (1.25 mW = 0.2 V)
Band SW ..... FM Stereo

Carrier signal modulation frequency ; 1000 Hz ±22.5 KHz dev.
Pilot Signal (19 kHz) ; ±7.5 KHz dev.

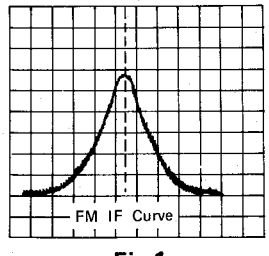


Fig 1.

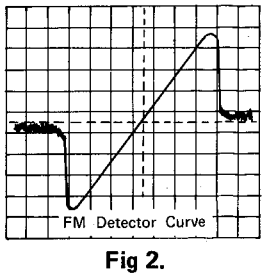
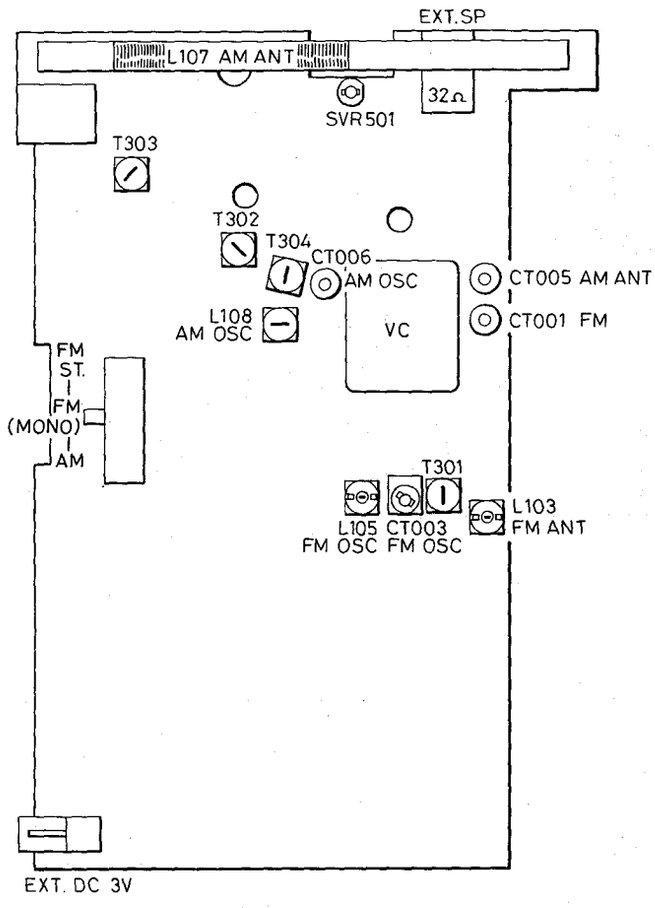


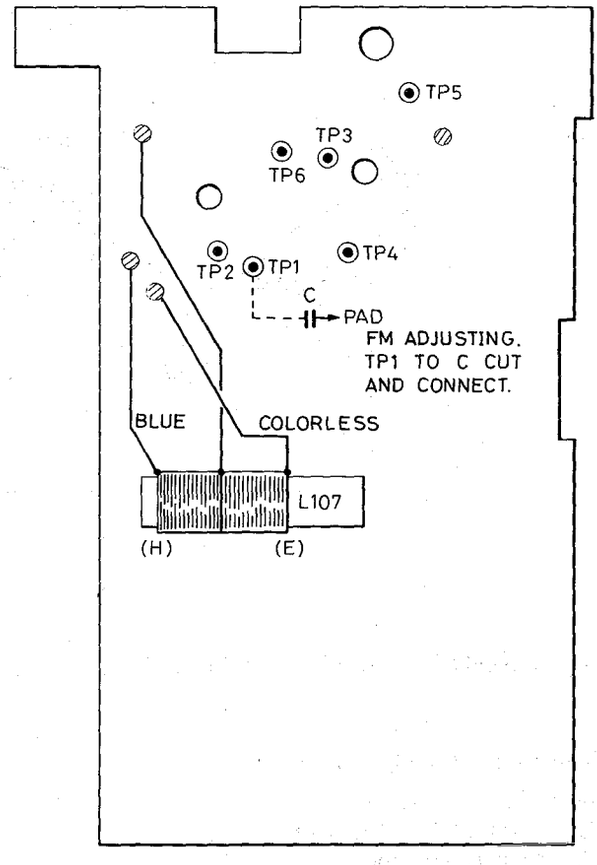
Fig 2.

Step	Adjustment Circuit	Connections		SG frequency & Gain	Position of tuning dial	Adjust-ment	Target value	Method of adjustment
		Input	Output					
1	VCO (19 KHz)	Connect FM SG to test point TP-1 (H) TP-2 (E)	Connect frequency counter to *TP-5 (H) TP-6 (E)	98 MHz (60 db)	98 MHz	SVR501	19kHz ± 100Hz	(1) In FM stereo mode and tune in. (2) *Adjust with no modulation.

* "No modulation" means to set MAIN & SUB signal and PILOT signal of stereo modulator to "OFF" position.
* When changing over the channels, exchange the connections of the external speaker terminals at the same time.
* Insert a resistor 47K ohm between TP-5 and counter.

PARTS LOCATION





ADJUSTMENT OF AMPLIFIER UNIT

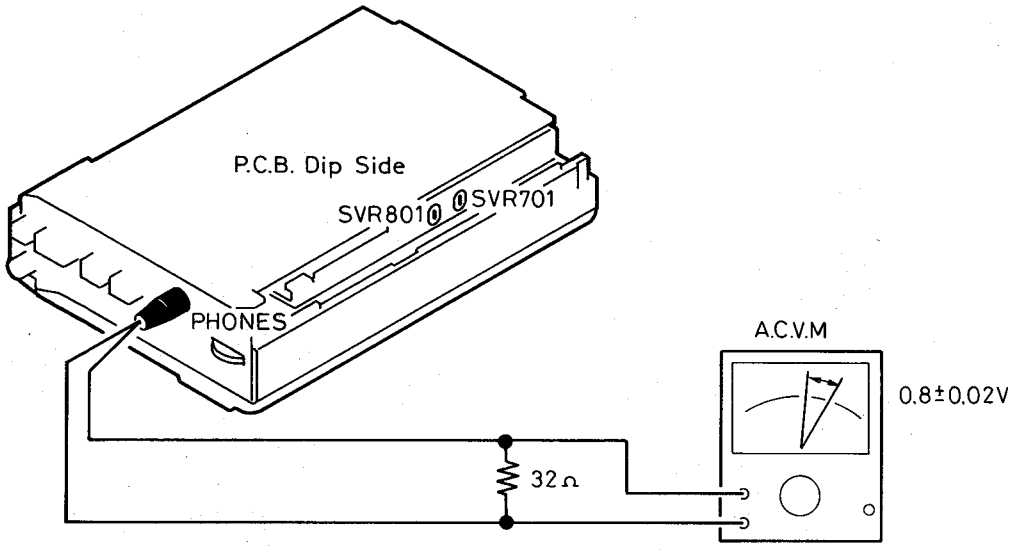
Adjustment of amplifier unit

1) Dolby adjustment
   Supply voltage: 3 volts DC (external power supply terminal)
   Load resistance: 32 ohms (stereo earphone terminal)
   Operation mode selector: TAPE OFF
   Tape selector: NORM 2
   Test tape: MTT212 (TEAC) or TCC120 (A BEX) . . . 315kHz, 250 nWb/m

(1) Play back the test tape at the maximum volume control position.
(2) In either forward or reverse direction, whichever the reproduction output is lower, turn SVR701 (left channel), SVR801 (right channel) by inserting screwdriver* through the adjusting hole shown in Fig. 3, and adjust the output to the following value.
   Stereo earphone terminal voltage: 0.8 ± 0.02 V.

*NOTE: Use all plastic screwdriver.

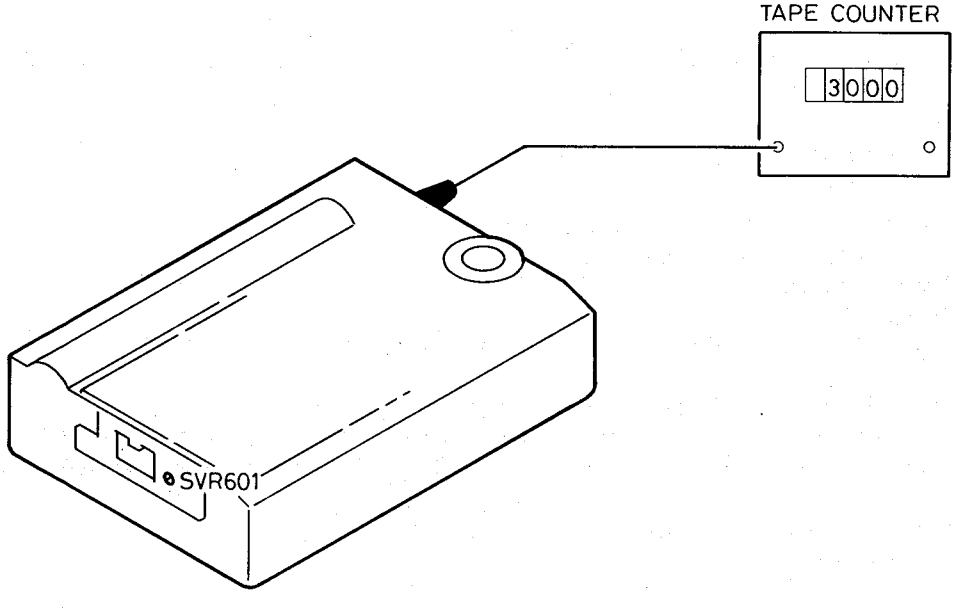
ADJUSTMENT OF AMPLIFIER UNIT



ADJUSTMENT OF MECHANISM UNIT

Adjustment of mechanism unit

1) Adjustment of tape speed
   Tape: TEAC MTT-111N (3 kHz wow tape)
   (1) Play back the tape.
   (2) Turn the motor speed control (SVR601) by screwdriver until the frequency counter reads 3,000 Hz.



2) Adjustment of azimuth
   Tape: TEAC MTT-114N (10 kHz azimuth tape)
   Adjust so that the azimuth output level of all four tracks may become maximum and at identical level (within 5 dB).

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTE:

* Materials of Capacitors and Resistors are abbreviated as follows;

AL ELECT .....Aluminum Electrolytic
BC CON .....Semiconductor Ceramic
CHIP BC .....Chip Semiconductor Ceramic
CHIP TAN .....Chip Tantal
ELECT .....Electrolytic
PP CON .....Polypropylene
MT GLAZE .....Metal Glaze
FP CARBON .....Flameproof Carbon

* Tolerance of Capacitors and Resistors are noted with follow symboles;

J .....±5%
K .....±10%
M .....±20%
N .....±30%
P .....+100−0%
Q .....+30−10%
Z .....+80−20%

ACCESSORIES

Ref. No.	Part No.	Description
	141-6-141T-25501	DISPLAY CARTON
	141-6-145T-14300	FOAM PLASTIC CASE
	141-6-318T-03900	PAD
	141-6-231T-15155	INNER POLYE COVER, SET
	141-6-409T-26405	INST MANUAL
	141-2-181T-16401	CASE, SET
	4-152T-07372	HEADPHONE 3.5D 32 OHM
	4-153T-14901	MIC ASSY
	4-241T-12683	MAGNETIC TAPE

CABINET

Ref. No.	Part No.	Description
1	141-0-111T-68306	CABINET ASSY
2	141-0-121T-21101	DECK PANEL ASSY
3	141-2-123T-08302	SIDE PANEL
4	141-0-126T-55502	BACK LID ASSY
5	141-0-128T-24900	BATTERY LID ASSY
6	141-2-164T-41900	SLIDE KNOB PAUSE/TAPE/DOLBY
7	141-2-164T-41930	SLIDE KNOB, FUNCTION
8	141-2-164T-42000	SLIDE KNOB, BAND
9	141-2-164T-42100	SLIDE KNOB MODE
10	141-2-164T-42200	SLIDE KNOB, EJECT
11	141-2-165T-06100	ROTARY KNOB, VOLUME
12	141-2-421T-59100	SPECIAL SCREW, ROTARY KNOB
13	141-2-210T-74000	BRACKET, BELT CLIP
14	141-2-421T-59300	SPECIAL SCREW, BELT CLIP
15	141-2-322T-90800	SHIELD PLATE, BACK LID
16	141-2-247T-51700	SHEET, SHIELD PLATE
17	141-2-448T-17200	CUSHION, BACK LID
18	141-2-247T-53300	SHEET, BACK LID
19	141-2-290T-16800	BRACKET, CABINET

CHASSIS

Ref. No.	Part No.	Description
21	141-0-124T-49405	TOP LID ASSY
22	141-2-421T-59200	SPECIAL SCREW, TOP LID
23	141-2-151T-19400	DECORATIVE PANEL
24	141-2-290T-15200	BRACKET, BATTERY PARTITION
25	141-2-853T-92200	SPRING PLATE, TOP LID
26	141-2-853T-92300	SPRING PLATE, R/P SELECT
27	141-2-740T-40700	LEVER, BAND SW SELECT
29	141-2-352T-73500	SPACER, BAND SW SELECT
30	141-2-290T-15100	BRACKET, LEVER (27) MTG.
32	141-2-683T-43500	RING, LEVER (27) MTG.
33	141-2-336T-35500	TERMINAL BATTERY (-)
34	141-2-382T-22900	TERMINAL (+)
35	141-2-661T-35200	PULLEY, DIAL STRING
36	141-2-754T-40600	SHAFT, PULLEY
37	141-2-340T-10100	ROPE 0.2X550MM
38	141-2-165T-06200	ROTARY KNOB, TUNING
39	141-2-160T-64400	PUSH BUTTON, STOP
40	141-2-160T-64300	PUSH BUTTON, PLAY
41	141-2-160T-64700	PUSH BUTTON, REWIND
42	141-2-160T-64600	PUSH BUTTON, F.FWD
43	141-2-160T-64500	PUSH BUTTON, RECORD
44	141-2-511T-30900	POINTER, TUNING
45	141-2-566T-16600	TUNING SHAFT
46	141-2-573T-18800	BEARING, TUNING SHAFT
47	141-0-210T-74300	BRACKET ASSY, PULLEY RELAY
48	141-2-411T-09000	PLATE NUT, TERMINAL (34) MTG.
49	141-2-247T-50900	SHEET, BATTERY PARTITION
50	141-2-247T-51000	SHEET, TERMINAL
51	141-2-247T-51300	SHEET, BATTERY
52	141-2-135T-99400	COVER, MOTOR PCB
53	141-2-290T-16500	BRACKET, MECHANISM CHASSIS
54	141-2-247T-53100	SHEET, BRACKET (53)
55	141-2-247T-53200	SHEET, BRACKET (53)
56	141-2-322T-90500	SHIELD PLATE, MOTOR
57	141-2-421T-61400	SPECIAL SCREW

FIXING PARTS

Ref. No.	Part No.	Description
Y1	BS3NS1R4R6+Z1	PAN HD 3 SPECIAL SCREW 1.4X1.6
Y2	BS3NS1R4+2+Z1	PAN HD 3 SPECIAL SCREW 1.4X2
Y3	BS3NS1R4+3+Z1	PAN HD 3 SPECIAL SCREW 1.4X3
Y4	BS3NS1R4+4+CP	PAN HD 3 SPECIAL SCREW 1.4X4
Y5	BS1SS1R4R6+N1	FLAT HD 1 SPECIAL SCREW 1.4X1.6
Y6	BS1SS1R4+3+CP	FLAT HD 1 SPECIAL SCREW 1.4X3
Y7	BS1BS1R7+3+CP	PAN HD 1B SPECIAL TAPPING SCREW 1.7X3
Y8	BS1BS1R7+5+CP	PAN HD 1B SPECIAL TAPPING SCREW 1.7X5
Y9	BS3NS1R43R+CP	PAN HD 3 SPECIAL SCREW 1.4X3.5
Y10	BS1SS1R4R8+CP	FLAT HD 1 SPECIAL SCREW 1.4X1.8

ELECTRICAL PARTS

Ref. No.	Part No.	Description
61	4-257T-70000	ANT COIL, AM (L107)

MAIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
71	141-4-285T-27172	P.C BOARD ASSY, AMP/TUNER
	4-235T-93371	SOCKET, EXT.DC
	4-267T-11800	SOCKET, HEADPHONE 3.5D. WITHOUT SW
	4-267T-11872	SOCKET, MIC WITHOUT SW
VC1~4	4-224T-28700	V.C
CT001	4-224T-27600	TRIMMER 10PF
CT003	4-224T-27600	TRIMMER 10PF
CT005	4-224T-27600	TRIMMER 10PF
CT006	4-224T-27600	TRIMMER 10PF
T301	4-256T-37840	I.F.T, FM
T302	4-256T-37940	I.F.T, FM
T303	4-256T-38040	I.F.T, AM
T304	4-256T-38140	I.F.T, AM
L103	4-265T-63340	V.H.F COIL, FM ANT.
L105	4-265T-63640	V.H.F COIL, FM OSC.
L108	4-258T-53840	O.S.C COIL, MW
L603	4-252T-14300	CHOKE COIL 20UH
L771	4-253T-16678	FILTER
L871	4-253T-16678	FILTER
L971	4-253T-16678	FILTER
L981	4-258T-53640	O.S.C COIL
CF101	4-253T-18300	FILTER 76~108MHZ
CF301	4-256T-88900	I.F FILTER 10.70MHZ RED
or	4-256T-88971	I.F FILTER 10.67MHZ BLUE
or	4-256T-88972	I.F FILTER 10.73MHZ ORANGE
or	4-256T-88973	I.F FILTER 10.64MHZ BLACK
or	4-256T-88974	I.F FILTER 10.76MHZ WHITE
CF302	4-256T-89071	I.F FILTER 460KHZ
S101~102	4-248T-05900	SWITCH, BAND SELECT FMST/MONO/AM
S911~914	4-248T-05300	SWITCH, R/P SELECT
S921	4-238T-93500	SWITCH, DOLBY ON/OFF & FM MO/ST
S931	4-238T-93500	SWITCH, TAPE SELECT & BEAT CANCEL 1/2
S941,942	4-248T-05200	SWITCH, TAPE/RADIO SELECT
S951,952	4-248T-04400	SWITCH,POWER
S971	4-238T-93500	SWITCH, PAUSE
VR771,871	4-220T-31700	V.R 20K(C), VOLUME L & R
SVR501	4-220T-32083	V.R 10K (B), VCO ADJUST
SVR701	4-222T-77800	V.R 300(B) DOLBY ADJUST
SVR801	4-222T-77800	V.R 300(B) DOLBY ADJUST
IC101	SITA7358F++++	IC TA7358F DIP8
IC301	SITA7757F++++	IC TA7757F DIP16
IC501	SIBA1360F++++	IC BA1360F DIP16
IC901	SIBA3503F++++	IC BA3503F FIP24
IC931	SIBA1102F++++	IC BA1102F FIP24
Q101	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q102	SF2K160+++K6Z	FET 2SK160 K6 Z
Q301	STC1009AFA4+Z	TR 2SC1009A FA4
or	STC2413Q++++Z	TR 2SC2413KQ
Q302	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q701	STD1328T++++Z	TR 2SD1328 T CHIP
Q702	SF2K198+++R+Z	FET 2SK198 R CHIP
Q703	STD1328T++++Z	TR 2SD1328 T CHIP
Q704	STD1328T++++Z	TR 2SD1328 T CHIP
Q705	STA1037R++++Z	TR 2SA1037K R CHIP
or	STA812+M5+++Z	TR 2SA812 M5 CHIP
Q751	STD1328T++++Z	TR 2SD1328 T CHIP
Q752	STD1328T++++Z	TR 2SD1328 T CHIP
Q771	STD1328T++++Z	TR 2SD1328 T CHIP
Q801	STD1328T++++Z	TR 2SD1328 T CHIP
Q802	SF2K198+++R+Z	FET 2SK198 R CHIP
Q803	STD1328T++++Z	TR 2SD1328 T CHIP
Q804	STD1328T++++Z	TR 2SD1328 T CHIP
Q805	STA1037R++++Z	TR 2SA1037K R CHIP
or	STA812+M5+++Z	TR 2SA812 M5 CHIP
Q851	STD1328T++++Z	TR 2SD1328 T CHIP
Q852	STD1328T++++Z	TR 2SD1328 T CHIP
Q871	STD1328T++++Z	TR 2SD1328 T CHIP
Q901	STD1328T++++Z	TR 2SD1328 T CHIP
Q931	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q932	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q951	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q971	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q981	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q982	STC1623L5+++Z	TR 2SC1623 L5 CHIP
or	STC2412R++++Z	TR 2SC2412K R CHIP
Q983	STD1328T++++Z	TR 2SD1328 T CHIP
Q991	STC2411R++++Z	TR 2SC2411K R CHIP
D101	SDDA204+++++Z	DIODE DA204K
or	SD1SS123++++Z	DIODE 1SS123
D102	SDDA204+++++Z	DIODE DA204K
or	SD1SS123++++Z	DIODE 1SS123
D901	SDSB05+05CP+Z	DIODE SB05-05CP
D903	SDDAP202++++Z	DIODE DAP202K CHIP
or	SD1S2835++++Z	DIODE 1S2835 CHIP
D905	SDDAP202++++Z	DIODE DAP202K CHIP
or	SD1S2835++++Z	DIODE 1S2835 CHIP
D951	SDDAP202++++Z	DIODE DAP202K CHIP
or	SD1S2835++++Z	DIODE 1S2835 CHIP
D953	SDOA90AR+++++	DIODE OA90A-R
D971	SDDAP202++++Z	DIODE DAP202K CHIP
or	SD1S2835++++Z	DIODE 1S2835 CHIP
D990	SLSLP114B++RE	LED SLP114B RE
D991	SLSLP114B++RE	LED SLP114B RE
C103	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C106	CC+50050CZSLR	CHIP CC 5PF 50V C Z SL
C108	CC+50150JZSLR	CHIP CC 15PF 50V J Z SL
C110	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C111	CC+50150JZCHR	CHIP CC 15PF 50V J Z CH
C113	CC+50010CZSLR	CHIP CC 1PF 50V C Z SL
C114	CC+50240JZCHR	CHIP CC 24PF 50V J Z CH
C116	CE++4476MVKSB	ELECT 47MF 4V M V KS B
C117	CC+50473ZZYFR	CHIP CC 0.047 50V Z Z YF
C119	CC+50060DZUJR	CHIP CC 6PF 50V D Z UJ
C120	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C121	CC+50223MZYBZ	CHIP CC 0.022 50V M Z YB
C122	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C124	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C125	CC+50330JZSLR	CHIP CC 33PF 50V J Z SL
C127	CC+50472KZYBR	CHIP CC 4700PF 50V K Z YB
C151	CC+50030CZSLR	CHIP CC 3PF 50V C Z SL
C301	CC+50331KZYBR	CHIP CC 330PF 50V K Z YB
C302	CC+50103KZYBZ	CHIP CC 0.01 50V K Z YB Z
C303	CC+50561JZUJR	CHIP CC 560PF 50V J Z UJ R
C304	CC+50223MZYBZ	CHIP CC 0.022 50V M Z YB
C305	CC+50223MZYBZ	CHIP CC 0.022 50V M Z YB
C306	CC+50223MZYBZ	CHIP CC 0.022 50V M Z YB
C307	CE++4336MVKSS	ELECT 33MF 4V M V KS
C308	CC+50820JZCHR	CHIP CC 82PF 50V J Z CH

Ref. No.	Part No.	Description
C309	CC+50181JZCHR	CHIP CC 180PF 50V J Z CH R
C310	CC+50102KZYBR	CHIP CC 1000PF 50V K Z YB
C311	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C312	CE++4227MVKSB	ELECT 220MF 4V M V KS B
C313	CC+50223ZZYFR	CHIP CC 0.022 50V Z Z YF
C320	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C321	CC+50331KZYBR	CHIP CC 330PF 50V K Z YB
C501	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C502	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C503	CT+35224MZSVZ	CHP TNTL 0.22MF 35V M Z SV
C504	CN100102JM++S	P P CON 0.001MF 100V J M
C505	CC+50153KZYBR	CHIP CC 0.015 50V K Z YB
C506	CC+50153KZYBR	CHIP CC 0.015 50V K Z YB
C507	CT+10475MZSVZ	CHP TNTL 4.7MF 10V M Z SV
C508	CT+35104MZSVZ	CHP TNTL 0.1MF 35V M Z SV
C509	CT+35104MZSVZ	CHP TNTL 0.1MF 35V M Z SV
C604	CE++4107MVKSB	ELECT 100MF 4V M V KS B
C605	CE++4227MVKSB	ELECT 220MF 4V M V KS B
C701	CT+35333MZSVZ	CHP TNTL 0.033MF 35V M Z S
C703	CC+50222KZYBR	CHIP CC 2200PF 50V K Z YB
C705	CC+50152KZYBR	CHIP CC 1500PF 50V K Z YB
C706	CT+35104MZSVZ	CHP TNTL 0.1MF 35V M Z SV
C707	CE+16106MVKSB	ELECT 10MF 16V M V KS B
C708	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C709	CE++4476MVKSB	ELECT 47MF 4V M V KS B
C710	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C711	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C712	CC+50101JZSLR	CHIP CC 100PF 50V J Z SL
C731	CC+50102KZYBR	CHIP CC 1000PF 50V K Z YB
C732	CC+50472KZYBR	CHIP CC 4700PF 50V K Z YB
C733	CC+50333ZZYFR	CHIP CC 0.033 50V Z Z YF
C734	CT+10475MZSVZ	CHP TNTL 4.7MF 10V M Z SV
C735	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C736	CC+50333ZZYFR	CHIP CC 0.033 50V Z Z YF
C737	CT+35104MZSVZ	CHP TNTL 0.1MF 35V M Z SV
C751	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C752	CC+50392KZYBR	CHIP CC 3900PF 50V K Z YB
C753	CC+50562KZYBR	CHIP CC 5600PF 50V K Z YB
C754	CC+50682KZYBR	CHIP CC 6800PF 50V K Z YB
C755	CC+50331KZYBR	CHIP CC 330PF 50V K Z YB
C756	CT+35224MZSVZ	CHP TNTL 0.22MF 35V M Z SV
C771	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C772	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C773	CC+50102KZYBR	CHIP CC 1000PF 50V K Z YB
C774	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C775	CT+10475MZSVZ	CHP TNTL 4.7MF 10V M Z SV
C776	CE++4107MVKSB	ELECT 100MF 4V M V KS B
C801	CT+35333MZSVZ	CHP TNTL 0.033MF 35V M Z S
C803	CC+50222KZYBR	CHIP CC 2200PF 50V K Z YB
C805	CC+50152KZYBR	CHIP CC 1500PF 50V K Z YB
C806	CT+35104MZSVZ	CHP TNTL 0.1MF 35V M Z SV
C807	CE+16106MVKSB	ELECT 10MF 16V M V KS B
C808	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C809	CE++4476MVKSB	ELECT 47MF 4V M V KS B
C810	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C811	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C812	CC+50101JZSLR	CHIP CC 100PF 50V J Z SL
C831	CC+50102KZYBR	CHIP CC 1000PF 50V K Z YB
C832	CC+50472KZYBR	CHIP CC 4700PF 50V K Z YB
C833	CC+50333ZZYFR	CHIP CC 0.033 50V Z Z YF
C834	CT+10475MZSVZ	CHP TNTL 4.7MF 10V M Z SV
C835	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C836	CC+50333ZZYFR	CHIP CC 0.033 50V Z Z YF
C837	CT+35104MZSVZ	CHP TNTL 0.1MF 35V M Z SV
C851	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C852	CC+50392KZYBR	CHIP CC 3900PF 50V K Z YB
C853	CC+50562KZYBR	CHIP CC 5600PF 50V K Z YB
C854	CC+50682KZYBR	CHIP CC 6800PF 50V K Z YB
C855	CC+50331KZYBR	CHIP CC 330PF 50V K Z YB
C856	CT+35224MZSVZ	CHP TNTL 0.22MF 35V M Z SV
C871	CT++4225MZSVZ	CHP TNTL 2.2MF 4V M Z SV
C872	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C873	CC+50102KZYBR	CHIP CC 1000PF 50V K Z YB

Ref. No.	Part No.	Description
C874	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C875	CT+10475MZSVZ	CHP TNTL 4.7MF 10V M Z SV
C876	CE++4107MVKSB	ELECT 100MF 4V M V KS B
C901	CE++4476MVKSB	ELECT 47MF 4V M V KS B
C904	CE++4107MVKSB	ELECT 100MF 4V M V KS B
C931	CE++4227MVKSB	ELECT 220MF 4V M V KS B
C932	CE++4227MVKSS	ELECT 220MF 4V M V KS
C951	CT++4106MZSVZ	CHP TNTL 10MF 4V M Z SV
C952	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C953	CT+10105MZSVZ	CHP TNTL 1MF 10V M Z SV
C954	CC+50102KZYBR	CHIP CC 1000PF 50V K Z YB
C971	CE++4336MVKSB	ELECT 33MF 4V M V KS B
C973	CE++4227MVKSB	ELECT 220MF 4V M V KS B
C981	CC+50181JZSLR	CHIP CC 180PF 50V J Z SL
C982	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C983	CC+50272KZYBR	CHIP CC 2700PF 50V K Z YB
C984	CT++4106MZSVZ	CHP TNTL 10MF 4V M Z SV
C985	CT++4106MZSVZ	CHP TNTL 10MF 4V M Z SV
C986	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C987	CC+25683ZZYFR	CHIP CC 0.068 25V Z Z YF
C988	CC+50103KZYBR	CHIP CC 0.01 50V K Z YB
C991	CE++4227MVKSB	ELECT 220MF 4V M V KS B
C992	CE++4107MVKSB	ELECT 100MF 4V M V KS B
C993	CE++4227MVKSB	ELECT 220MF 4V M V KS B
C994	CE++4107MVKSB	ELECT 100MF 4V M V KS B
C995	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
C996	CC+25223KZYBR	CHIP CC 0.022 25V K Z YB
R1	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R2	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R3	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R4	RM/+80000ZM+Z	MT-GLAZE Z 0 0 1/8W Z
R5	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R51	RM/+80000ZM+Z	MT-GLAZE Z 0 0 1/8W Z
R52	RM/+80000ZM+Z	MT-GLAZE Z 0 0 1/8W Z
R53	RM/+80000ZM+Z	MT-GLAZE Z 0 0 1/8W Z
R54	RM/+80000ZM+Z	MT-GLAZE Z 0 0 1/8W Z
R61	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R62	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R63	RM/100000ZM+Z	MT-GLAZE Z 0 0 1/10W Z
R101	RM/10330JZM+Z	MT-GLAZE Z 33 J 1/10W Z
R102	RM/10104JZM+Z	MT-GLAZE Z 100K J 1/10W Z
R103	RM/10224JZM+Z	MT-GLAZE Z 220K J 1/10W Z
R104	RM/10330JZM+Z	MT-GLAZE Z 33 J 1/10W Z
R105	RM/10331JZM+Z	MT-GLAZE Z 330 J 1/10W Z
R106	RM/10681JZM+Z	MT-GLAZE Z 680 J 1/10W Z
R107	RM/10330JZM+Z	MT-GLAZE Z 33 J 1/10W Z
R108	RM/10333JZM+Z	MT-GLAZE Z 33K J 1/10W Z
R151	RM/10220JZM+Z	MT-GLAZE Z 22 J 1/10W Z
R152	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R301	RM/10221JZM+Z	MT-GLAZE Z 220 J 1/10W Z
R302	RM/10474JZM+Z	MT-GLAZE Z 470K J 1/10W Z
R303	RM/10151JZM+Z	MT-GLAZE Z 150 J 1/10W Z
R304	RM/+8331JZM+Z	MT-GLAZE Z 330 J 1/8W Z
R305	RM/10472JZM+Z	MT-GLAZE Z 4.7K J 1/10W Z
R306	RM/10222JZM+Z	MT-GLAZE Z 2.2K J 1/10W Z
R307	RM/10224JZM+Z	MT-GLAZE Z 220K J 1/10W Z
R308	RM/10220JZM+Z	MT-GLAZE Z 22 J 1/10W Z
R309	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R501	RM/10682JZM+Z	MT-GLAZE Z 6.8K J 1/10W Z
R502	RM/+8272JZM+Z	MT-GLAZE Z 2.7K J 1/8W Z
R503	RM/10153JZM+Z	MT-GLAZE Z 15K J 1/10W Z
R504	RM/10153JZM+Z	MT-GLAZE Z 15K J 1/10W Z
R505	RM/10394JZM+Z	MT-GLAZE Z 390K J 1/10W Z
R506	RM/10394JZM+Z	MT-GLAZE Z 390K J 1/10W Z
R701	RM/+8102JZM+Z	MT-GLAZE Z 1K J 1/8W Z
R702	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R703	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R706	RM/10332JZM+Z	MT-GLAZE Z 3.3K J 1/10W Z
R708	RM/10393JZM+Z	MT-GLAZE Z 39K J 1/10W Z
R709	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R710	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R711	RM/10105JZM+Z	MT-GLAZE Z 1.0M J 1/10W Z
R712	RM/10101JZM+Z	MT-GLAZE Z 100 J 1/10W Z
R713	RM/10154JZM+Z	MT-GLAZE Z 150K J 1/10W Z

Ref. No.	Part No.	Description
R714	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R715	RM/10822JZM+Z	MT-GLAZE Z 8.2K J 1/10W Z
R716	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R717	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R718	RM/10154JZM+Z	MT-GLAZE Z 150K J 1/10W Z
R719	RM/10102JZM+Z	MT-GLAZE Z 1.0K J 1/10W Z
R720	RM/10104JZM+Z	MT-GLAZE Z 100K J 1/10W Z
R731	RM/10332JZM+Z	MT-GLAZE Z 3.3K J 1/10W Z
R732	RM/10473JZM+Z	MT-GLAZE Z 47K J 1/10W Z
R733	RM/10224JZM+Z	MT-GLAZE Z 220K J 1/10W Z
R734	RM/10824JZM+Z	MT-GLAZE Z 820K J 1/10W Z
R751	RM/10682JZM+Z	MT-GLAZE Z 6.8K J 1/10W Z
R752	RM/+8222JZM+Z	MT-GLAZE Z 2.2K J 1/8W Z
R753	RM/10271JZM+Z	MT-GLAZE Z 270 J 1/10W Z
R754	RM/10184JZM+Z	MT-GLAZE Z 180K J 1/10W Z
R755	RM/10333JZM+Z	MT-GLAZE Z 33K J 1/10W Z
R756	RM/10222JZM+Z	MT-GLAZE Z 2.2K J 1/10W Z
R757	RM/10123JZM+Z	MT-GLAZE Z 12K J 1/10W Z
R771	RM/10153JZM+Z	MT-GLAZE Z 15K J 1/10W Z
R772	RM/10472JZM+Z	MT-GLAZE Z 4.7K J 1/10W Z
R773	RM/10102JZM+Z	MT-GLAZE Z 1.0K J 1/10W Z
R774	RM/10104JZM+Z	MT-GLAZE Z 100K J 1/10W Z
R801	RM/10102JZM+Z	MT-GLAZE Z 1.0K J 1/10W Z
R802	RM/+8103JZM+Z	MT-GLAZE Z 10K J 1/8W Z
R803	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R806	RM/10332JZM+Z	MT-GLAZE Z 3.3K J 1/10W Z
R808	RM/10393JZM+Z	MT-GLAZE Z 39K J 1/10W Z
R809	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R810	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R811	RM/10105JZM+Z	MT-GLAZE Z 1.0M J 1/10W Z
R812	RM/10101JZM+Z	MT-GLAZE Z 100 J 1/10W Z
R813	RM/10154JZM+Z	MT-GLAZE Z 150K J 1/10W Z
R814	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R815	RM/10822JZM+Z	MT-GLAZE Z 8.2K J 1/10W Z
R816	RM/10562JZM+Z	MT-GLAZE Z 5.6K J 1/10W Z
R817	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R818	RM/10154JZM+Z	MT-GLAZE Z 150K J 1/10W Z
R819	RM/+8102JZM+Z	MT-GLAZE Z 1K J 1/8W Z
R820	RM/10104JZM+Z	MT-GLAZE Z 100K J 1/10W Z
R831	RM/10332JZM+Z	MT-GLAZE Z 3.3K J 1/10W Z
R832	RM/10473JZM+Z	MT-GLAZE Z 47K J 1/10W Z
R833	RM/10224JZM+Z	MT-GLAZE Z 220K J 1/10W Z
R834	RM/10824JZM+Z	MT-GLAZE Z 820K J 1/10W Z
R851	RM/10682JZM+Z	MT-GLAZE Z 6.8K J 1/10W Z
R852	RM/10222JZM+Z	MT-GLAZE Z 2.2K J 1/10W Z
R853	RM/10271JZM+Z	MT-GLAZE Z 270 J 1/10W Z
R854	RM/10184JZM+Z	MT-GLAZE Z 180K J 1/10W Z
R855	RM/+8333JZM+Z	MT-GLAZE Z 33K J 1/8W Z
R856	RM/10222JZM+Z	MT-GLAZE Z 2.2K J 1/10W Z
R857	RM/10123JZM+Z	MT-GLAZE Z 12K J 1/10W Z
R871	RM/10153JZM+Z	MT-GLAZE Z 15K J 1/10W Z
R872	RM/10472JZM+Z	MT-GLAZE Z 4.7K J 1/10W Z
R873	RM/10102JZM+Z	MT-GLAZE Z 1.0K J 1/10W Z
R874	RM/10104JZM+Z	MT-GLAZE Z 100K J 1/10W Z
R902	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R903	RM/10122JZM+Z	MT-GLAZE Z 1.2K J 1/10W Z
R904	RM/10153JZM+Z	MT-GLAZE Z 15K J 1/10W Z
R905	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R931	RM/+8103JZM+Z	MT-GLAZE Z 10K J 1/8W Z
R932	RM/+8103JZM+Z	MT-GLAZE Z 10K J 1/8W Z
R933	RM/10270JZM+Z	MT-GLAZE Z 27 J 1/10W Z
R952	RM/10472JZM+Z	MT-GLAZE Z 4.7K J 1/10W Z
R953	RM/10104JZM+Z	MT-GLAZE Z 100K J 1/10W Z
R971	RM/10472JZM+Z	MT-GLAZE Z 4.7K J 1/10W Z
R972	RM/10223JZM+Z	MT-GLAZE Z 22K J 1/10W Z
R973	RM/10222JZM+Z	MT-GLAZE Z 2.2K J 1/10W Z
R974	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R981	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R982	RM/10330JZM+Z	MT-GLAZE Z 33 J 1/10W Z
R983	RM/10220JZM+Z	MT-GLAZE Z 22 J 1/10W Z
R984	RM/10272JZM+Z	MT-GLAZE Z 2.7K J 1/10W Z
R985	RM/103R3KZM+Z	MT-GLAZE Z 3.3 K 1/10W Z
R986	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z

Ref. No.	Part No.	Description
R987	RM/10334JZM+Z	MT-GLAZE Z 330K J 1/10W Z
R988	RM/10103JZM+Z	MT-GLAZE Z 10K J 1/10W Z
R991	RM/10331JZM+Z	MT-GLAZE Z 330 J 1/10W Z
R992	RM/10152JZM+Z	MT-GLAZE Z 1.5K J 1/10W Z
R993	RM/10102JZM+Z	MT-GLAZE Z 1.0K J 1/10W Z
R994	RM/10561JZM+Z	MT-GLAZE Z 560 J 1/10W Z
R995	RM/10153JZM+Z	MT-GLAZE Z 15K J 1/10W Z

MECHANISM P.C.BOARD ASSY

Ref. No.	Part No.	Description
72	141-4-285T-27200	P.C BOARD ASSY, MECHANISM
SVR601	4-220T-32180	SEMI V.R 4.7K(W)
IC601	SILA5524M++++	IC LA5524M FIP8
C601	CT++4106MZSVZ	CHP TNTL 10MF 4V M Z SV
C602	CT++4106MZSVZ	CHP TNTL 10MF 4V M Z SV
R601	RM/10182JZM+Z	MT-GLAZE Z 1.8K J 1/10W Z
R602	RM/10682JZM+Z	MT-GLAZE Z 6.8K J 1/10W Z
R603	RC/+6680JP+++	CARBON P 68 OHM J 1/6W
R604	RM/+8151JP+HR	METAL P 150 OHM J 1/8W

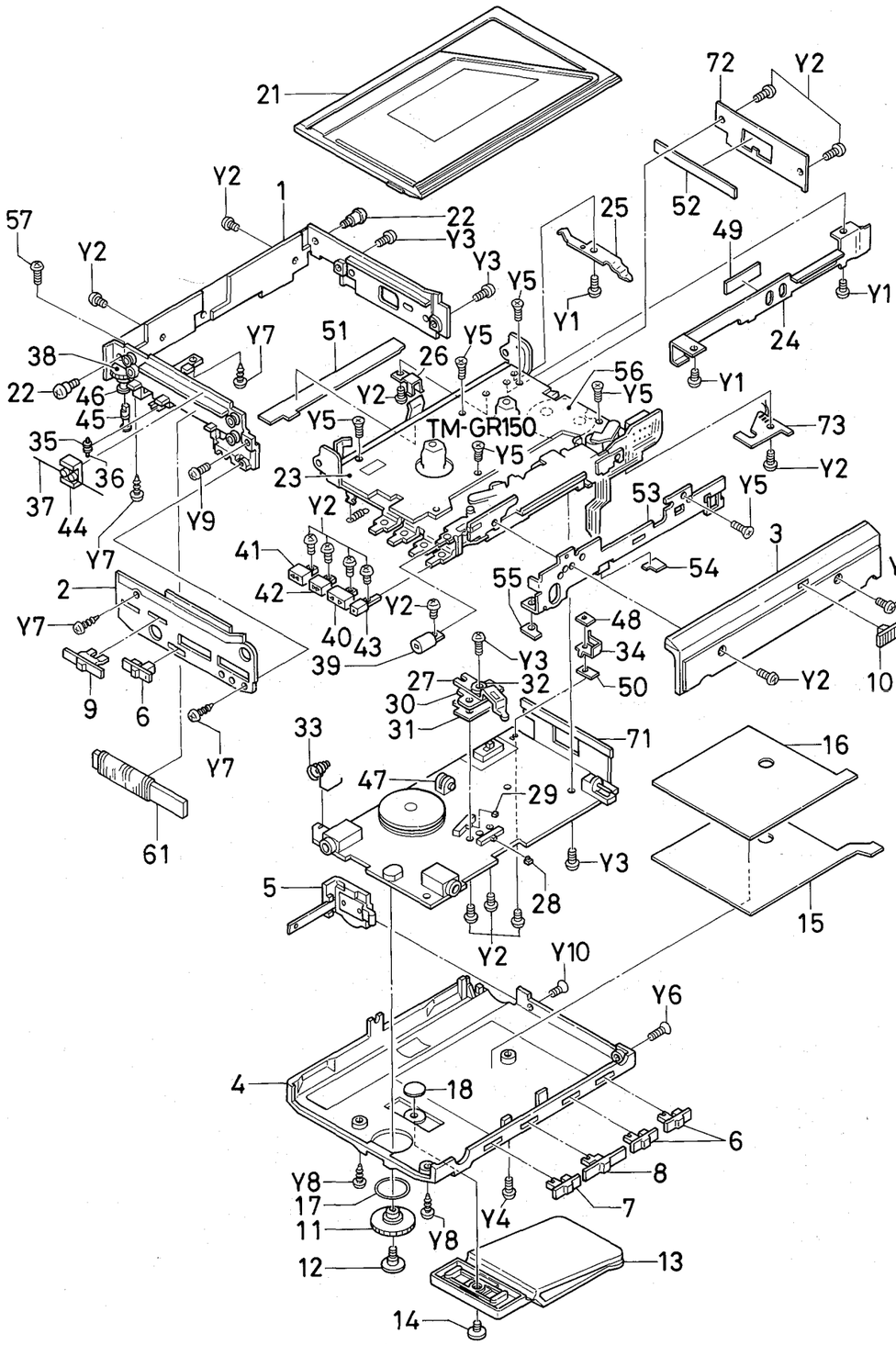
MOTOR P.C.BOARD ASSY

Ref. No.	Part No.	Description
73	141-4-285T-42100	P.C BOARD ASSY, MOTOR
L601	4-252T-14300	CHOKE COIL 20UH
L602	4-252T-14300	CHOKE COIL 20UH
C603	CT+10475MZSVZ	CHP TNTL 4.7MF 10V M Z SV

MICROPHONE ASSEMBLY

Ref. No.	Part No.	Description
A	141-2-111T-68700	CABINET
B	141-0-126T-56200	BACK LID ASSY
C	141-2-154T-08400	ESCUTCHEON
D	141-2-247T-49500	SHEET
E	141-2-385T-08100	BRACKET MIC
F	141-2-448T-15500	CUSHION
G	4-285T-35500	P.C BOARD
H	SDGZA030Y++++	ZENER DIODE GZA3.0Y
I	4-153T-14971	MIC
J	4-153T-14972	MIC

CABINET & CHASSIS EXPLODED VIEW



PARTS LIST

MECHANISM (TM GR150)

Ref. No.	Part No.	Description
M1	141–0–311T–51800	CHASSIS ASSY
M2	141–2–732T–36000	SLIDE, LOCK
M3	141–2–860T–04900	SPRING WIRE, SLIDE (M2) RETURN
M4	141–2–732T–35400	SLIDE, REWIND BUTTON
M5	141–2–457T–23800	SPECIAL WASHER,"E"RING 1.5, SLIDE (M4)
M6	141–2–457T–23700	SPECIAL WASHER,"E" RING 1.2, SLIDE (M4)
M7	141–2–732T–35500	SLIDE, F.F BUTTON
M8	141–2–860T–05100	SPRING WIRE, REW/PLAY SLIDE RETURN
M9	141–2–856T–56800	SPRING COIL, SLIDE (M7) RETURN
M10	141–2–457T–23800	SPECIAL WASHER, FIXER SPRING COIL (M9)
M11	141–2–732T–35600	SLIDE, PLAY BUTTON
M12	141–2–732T–36200	SLIDE, TRIGGER
M13	141–2–856T–57000	SPRING COIL, SLIDE (M12) RETURN
M14	141–2–732T–35700	SLIDE, PLAY
M15	141–2–860T–05200	SPRING WIRE, SLIDE (M17) RETURN
M16	141–2–457T–23700	SPECIAL WASHER, PLAY/REC WIRE
M17	141–0–732T–35800	SLIDE ASSY, REC BUTTON
M18	141–2–457T–23700	SPECIAL WASHER, SLIDE (M17)
M19	141–0–740T–31800	LEVER ASSY, PLAY LINK
M20	141–2–461T–51500	PIPE, LEVER (M19) HOLDER
M21	141–2–860T–05500	SPRING WIRE, HEAD SLIDE RETURN
M22	141–2–856T–56900	SPRING COIL, HEAD SLIDE LINKAGE
M23	141–2–732T–36900	SLIDE, REC SW OPERATION
M24	141–2–860T–05300	SPRING WIRE, SLIDE (M23) RETURN
M25	141–2–462T–85400	BOSS, SLIDE (M23) STOPPER
M26	141–2–457T–23800	SPECIAL WASHER, SLIDE (M23)
M27	141–0–740T–32200	LEVER ASSY, R/F SELECT
M28	141–2–856T–57100	SPRING COIL, LEVER (M27) RETURN
M29	141–2–462T–86900	BOSS, LEVER (M27) HOLDER
M30	141–2–421T–59400	SPECIAL SCREW, R/F LEVER (M28) FULCRUM
M31	141–2–581T–43200	GEAR, REW/FF
M32	141–0–581T–43500	GEAR ASSY, END SENSOR
M33	141–2–856T–56000	SPRING COIL, END SENSOR
M34	141–2–661T–45900	PULLEY, END SENSOR
M35	141–2–457T–38400	SPECIAL WASHER, GNW2.1X5X0.5
M36	141–2–453T–33100	WASHER, GNW1.6X3.2X0.25
M37	141–2–740T–31100	LEVER, AUTO STOP/REVERSE SELECT
M38	141–2–462T–85400	BOSS, LEVER (M37) HOLDER
M39	141–2–853T–91300	SPRING PLATE, LEVER CLICK
M40	141–2–860T–04800	SPRING WIRE, HEAD SW SELECT
M41	141–2–457T–23000	SPECIAL WASHER, SPRING WIRE (M40)
M42	141–0–577T–08000	BRACKET BEARING ASSY (R)
M43	141–0–577T–07900	BRACKET BEARING ASSY (N)
M44	141–2–740T–30900	LEVER, PLAY CANCEL
M45	141–0–740T–31000	LEVER ASSY, PLAY SEESAW
M46	141–2–457T–23800	SPECIAL WASHER, LEVER (M45)
M47	141–2–581T–43400	GEAR, PLAY (N)
M48	141–2–581T–43300	GEAR, PLAY (R)
M49	141–2–453T–33901	WASHER, 1.2X2.5X0.25
M50	141–2–581T–43100	GEAR, CAM
M51	141–2–740T–30800	LEVER, PLAY (R)
M52	141–2–856T–57300	SPRING COIL, LEVER (M51) RETURN
M53	141–2–740T–32000	LEVER, PLAY (N)
M54	141–2–856T–57400	SPRING COIL, LEVER (M53) RETURN
M55	141–2–457T–23800	SPECIAL WASHER, LEVER (M51,M53)
M56	141–0–740T–32100	LEVER ASSY, CH. OPERATION
M57	141–2–740T–32400	LEVER, TRIGGER
M58	141–2–856T–57600	SPRING COIL, LEVER (M57) RETURN

Ref. No.	Part No.	Description
M59	141–2–453T–33100	WASHER, GNW1.6X3.2X0.25
M60	141–2–581T–42800	GEAR, PLAY LINK (1)
M61	141–2–453T–33901	WASHER, 1.2X2.5X0.25
M62	141–2–581T–42900	GEAR, CH. DRIVE
M63	141–2–457T–23800	SPECIAL WASHER, GEAR (M62)
M64	4–527T–29271	COMMUTATE MOTOR, MAIN
M65	141–2–445T–35500	RUBBER CUSHION, MOTOR (M64)
M66	141–2–448T–16000	CUSHION 4X4X1, MOTOR (M64)
M67	141–2–462T–85300	BOSS, MOTOR (M64)
M68	141–0–521T–16801	FLYWHEEL ASSY (N)
M69	141–0–521T–16770	FLYWHEEL ASSY (R)
M70	141–2–453T–30001	WASHER, GF1.7X3.2X0.25
M71	141–2–453T–36700	WASHER 1X2X0.25
M72	141–2–564T–39501	SQUARE BELT, MAIN
M73	141–0–290T–13500	BRACKET ASSY, PULLEY
M74	141–2–661T–47400	PULLEY, RELAY
M75	141–2–457T–04102	SPECIAL WASHER, GNW1.7X4.5X0.13
M76	141–2–453T–36900	WASHER, 1.3X2.6X0.13
M77	141–2–740T–30500	LEVER, FF LINK
M78	141–2–740T–30400	LEVER, REW LINK
M79	141–2–457T–23800	SPECIAL WASHER, LEVER (M77,M78)
M80	141–0–740T–30600	LEVER ASSY, REC LINK (1)
M81	141–2–457T–23800	SPECIAL WASHER, LEVER (M80)
M82	141–2–740T–31200	LEVER, SAFETY RECORD
M83	141–2–856T–56500	SPRING COIL, LEVER (M82) RETURN
M84	141–2–462T–85400	BOSS, LEVER (M82) MTG.
M85	141–2–740T–33500	LEVER, REC LINK (3)
M86	141–2–732T–35000	SLIDE, REC LINK (2)
M87	141–2–453T–61000	WASHER 1.8X3.5X0.3, SLIDE (M86)
M88	141–2–853T–91700	SPRING PLATE, CASSETTE HOLDER
M89	141–2–732T–35200	SLIDE, PINCH ROLLER SELECT
M90	141–2–853T–91400	SRPING PLATE, HEAD CH. SWITCH
M91	141–2–740T–30700	LEVER, REC. LOCK
M92	141–2–860T–04600	SPRING WIRE, LEVER (M91) RETURN
M93	141–2–457T–23800	SPECIAL WASHER, LEVER (M91)
M94	141–0–732T–35300	SLIDE ASSY, STOP BUTTON
M95	141–2–856T–56600	SPRING COIL, SLIDE (M94) RETURN
M96	141–2–462T–85700	BOSS, SLIDE (M94) MTG.
M97	141–2–457T–23800	SPECIAL WASHER, STOP BUTTON SLIDE
M98	141–0–732T–35100	SLIDE ASSY, HEAD SLIDE
M99	141–2–457T–23700	SPECIAL WASHER, SLIDE (M98)
M100	4–242T–35801	MAGNETIC HEAD ASSY, R/P HEAD
M101	4–285T–45400	P.C BOARD, R/P HEAD
M102	4–248T–05371	SWITCH, CH SELECT
M103	141–2–856T–56101	SPRING COIL, AZIMUTH ADJUST
M104	141–2–462T–87000	BOSS, R/P SPACER
M105	141–2–821T–14200	TAPE GUIDE
M106	141–2–860T–04701	SPRING WIRE, PINCH ROLLER (R)
M107	141–2–457T–23700	SPECIAL WASHER, SPRING WIRE (M106)
M108	141–0–545T–10400	PINCH ROLLER LEVER ASSY (R)
M109	141–0–545T–10500	PINCH ROLLER LEVER ASSY (N)
M110	141–2–457T–04110	SPECIAL WASHER, GNW 1.7X4.5X0.5
M111	141–2–457T–23700	SPECIAL WASHER, SPRING WIRE (N)
M112	141–0–740T–32301	LEVER ASSY, ERASE HEAD
M113	141–2–860T–04502	SPRING WIRE, PINCH ROLLER (N)
M114	141–2–856T–57700	SPRING COIL, LEVER (M112) RETURN
M115	141–2–737T–12000	BRACKET SLIDE, EJECT
M116	141–2–740T–33600	LEVER, EJECT
M117	141–2–860T–05000	SPRING WIRE, LEVER (M116) RETURN
M118	141–2–462T–85900	BOSS, LEVER (M116) MTG.
M119	141–2–732T–35900	SLIDE, EJECT
M120	141–2–462T–85800	BOSS, SLIDE (M119) MTG.
M121	141–0–290T–13300	BRACKET ASSY, BRACKET REEL
M122	141–0–532T–06800	REEL GUIDE ASSY, TAKE UP (N)

PARTS LIST

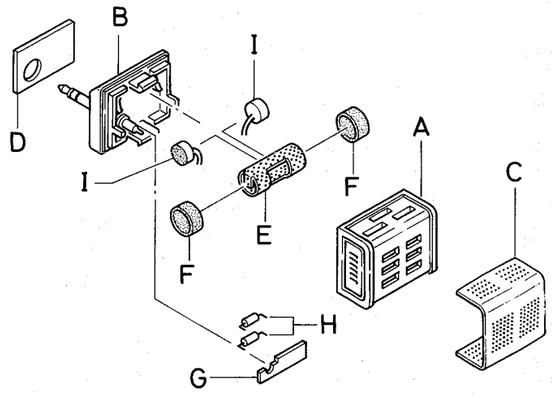
Ref. No.	Part No.	Description
M123	141-2-453T-33901	WASHER, REEL (M122)
M124	141-0-532T-06700	REEL GUIDE ASSY, TAKE UP (R)
M125	141-2-661T-45700	PULLEY, END SENSOR (R)
M126	141-2-856T-56300	SPRING COIL, BACK TENSION
M127	141-2-453T-33901	WASHER, REEL (M124)
M128	141-2-581T-43000	GEAR, PLAY LINK (2)
M129	141-2-453T-30000	WASHER, GEAR (M128)
M130	141-2-740T-31300	LEVER, PLAY SW
M131	141-2-856T-57200	SPRING COIL, LEVER (M130) RETURN
M132	141-2-740T-31400	LEVER, END (R) CANCEL
M133	141-2-856T-56700	SPRING COIL, LEVER (M132) RETURN
M134	141-2-462T-85500	BOSS, LEVER (M132) MTG.
M135	141-0-740T-31700	LEVER ASSY, BALANCE
M137	141-2-462T-85602	BOSS, END LEVER MTG.
M138	141-2-740T-41000	LEVER, AUTO STOP OPERATION
M139	141-2-860T-08100	SPRING WIRE, LEVER (M138) RETURN
M140	141-2-462T-87700	BOSS, LEVER (M138) MTG.
M141	141-2-740T-31500	LEVER, SELECT
M142	141-2-462T-85400	BOSS, LEVER (M141) MTG.
M143	141-2-421T-58800	SPECIAL SCREW, PCB MTG.
M144	141-2-247T-57200	SHEET
M145	141-2-462T-87600	BOSS, TAPE GUIDE STOPPER
M146	141-2-247T-55300	SHEET
M147	141-2-421T-61300	SPECIAL SCREW
M148	141-2-421F-59200	SPECIAL SCREW, BRACKET (M121) MTG.

FIXING PARTS (MECHANISM)

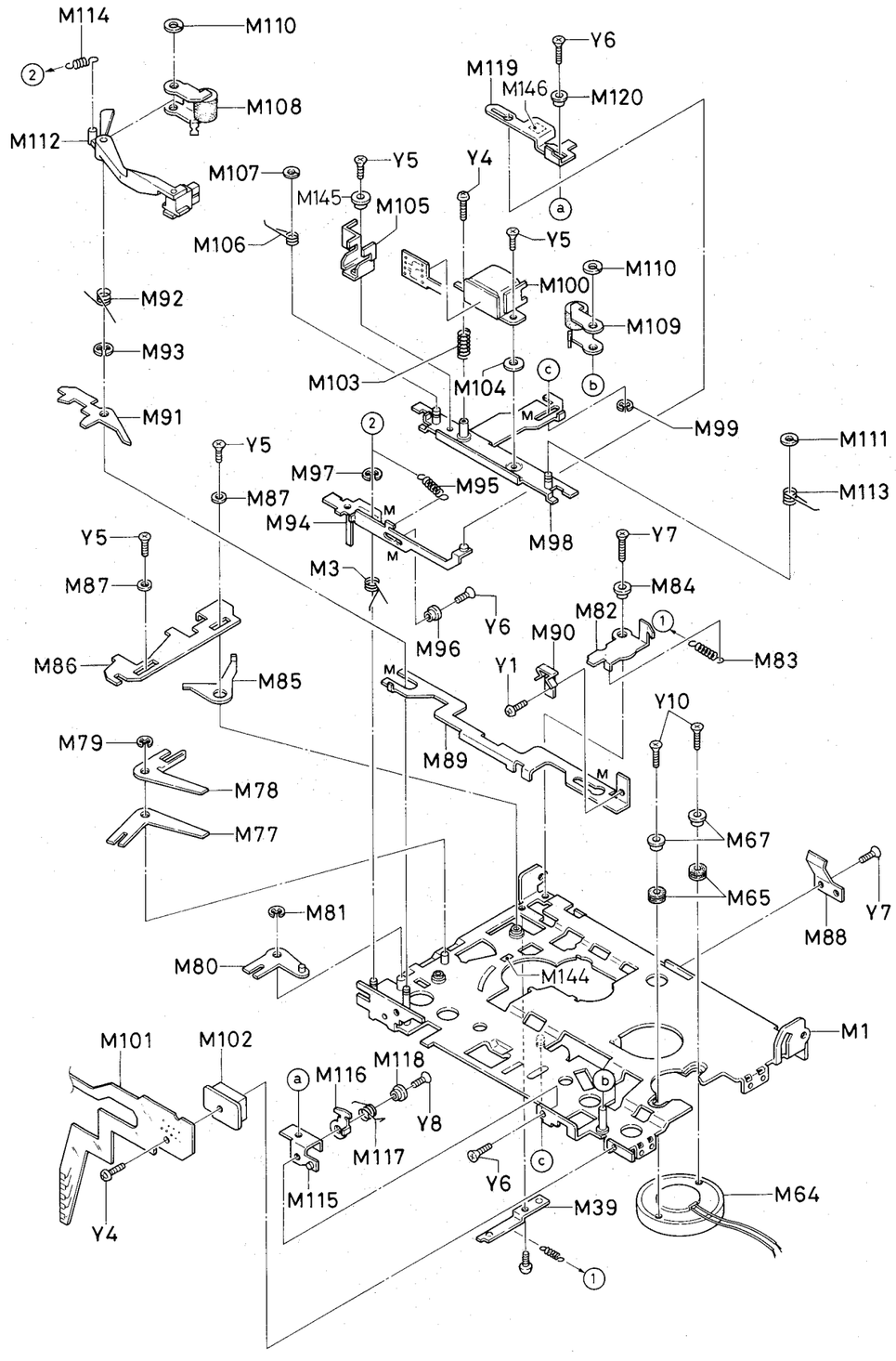
Ref. No.	Part No.	Description
Y1	BS1NS1R4R6+N1	PAN HD 1 SPECIAL SCREW
Y2	BS1NS1R4+2+Z1	PAN HD 1 SPECIAL SCREW 1.4X2
Y3	BS3NS1R4+2+ZK	PAN HD 3 SPECIAL SCREW
Y4	BS3NS1R4+3+N1	PAN HD 3 SPECIAL SCREW
Y5	BS1SS1R4R8+C1	FLAT HD 1 SPECIAL SCREW
Y6	BS1SS1R4+2+ZK	FLAT HD 1 SPECIAL SCREW
Y7	BS1SS1R42R+Z1	FLAT HD 1 SPECIAL SCREW
Y8	BS1SS1R4+3+ZK	FLAT HD 1 SPECIAL SCREW
Y9	BS1SS1R4+4+ZK	FLAT HD 1 SPECIAL SCREW
Y10	BS1SS1R7+3+ZK	FLAT HD 1 SPECIAL SCREW 1.7X3

MICROPHONE P.C.BOARD ASSY

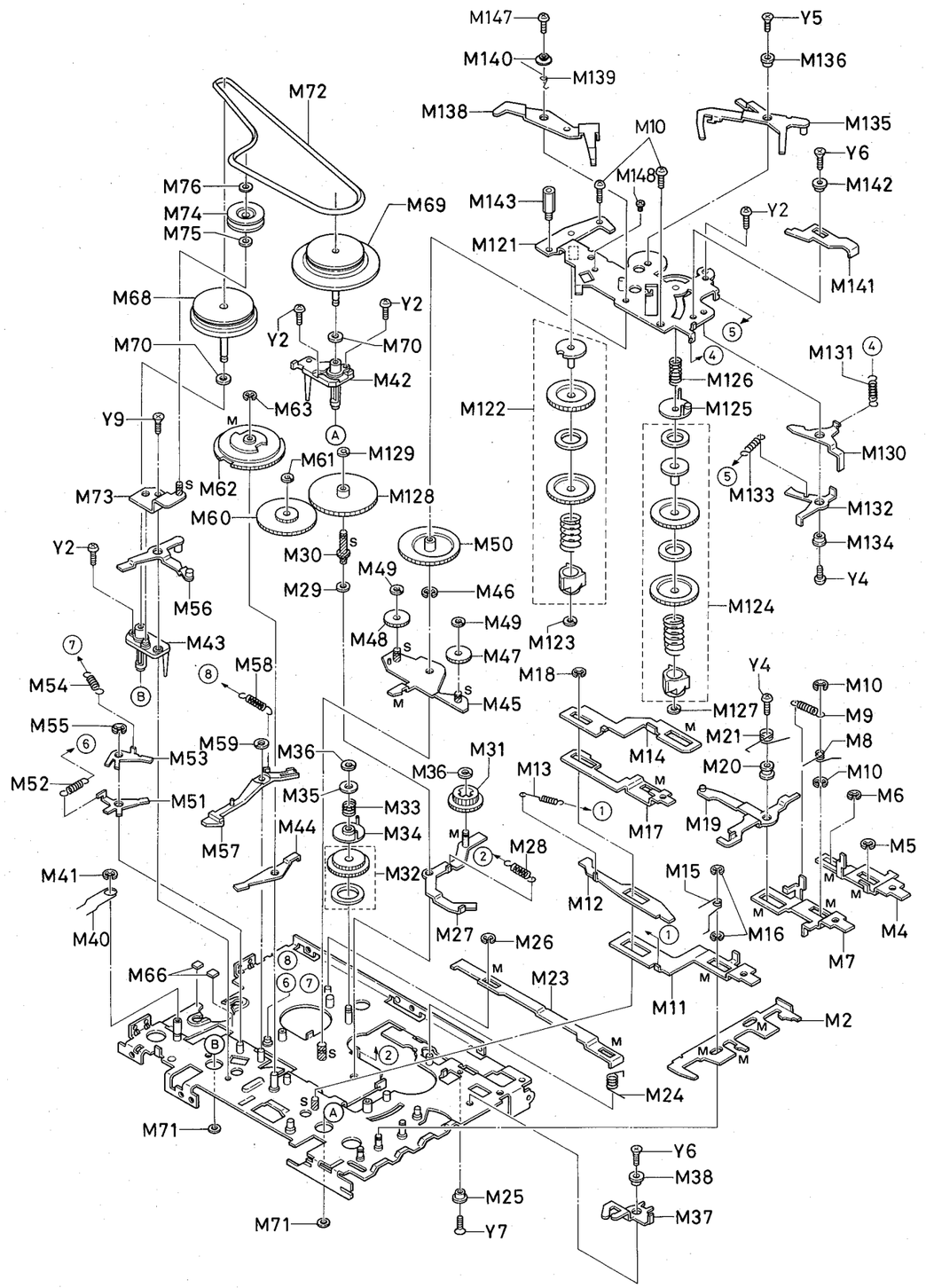
Ref. No.	Part No.	Description
A	141-2-111T-68700	CABINET
B	141-0-126T-56200	BACK LID ASSY
C	141-2-154T-08400	ESCUTCHEON
D	141-2-247T-49500	SHEET
E	141-2-385T-08100	BRACKET MIC
F	141-2-448T-15500	CUSHION
G	4-285T-35500	P.C BOARD
H	SDGZA030Y++++	ZENER DIODE GZA3.0Y
I	4-153T-14971	MIC
or	4-153T-14972	MIC



MECHANISM EXPLODED VIEW



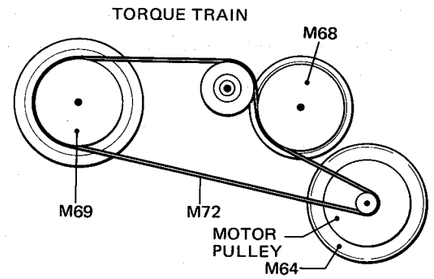
MECHANISM EXPLODED VIEW



DESCRIPTION OF MECHANISM OPERATION

1. Driving sequence (torque train)

The torque of motor M64 is transmitted from motor pulley to flywheels M69, M68 through square belt M72 to rotate them in mutually reverse directions.

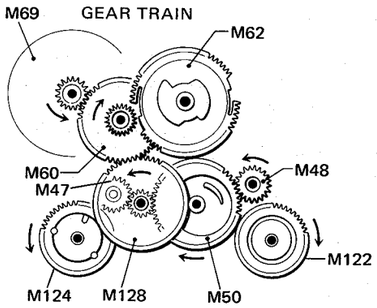


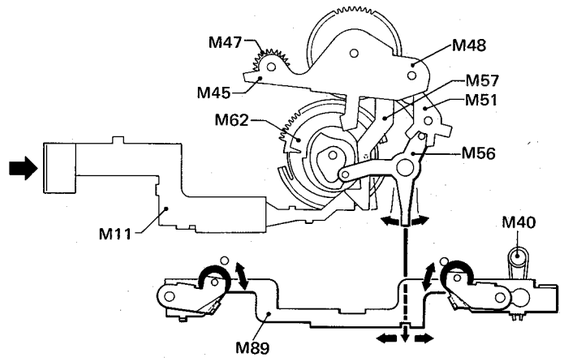
2. Gear driving sequence (gear train)

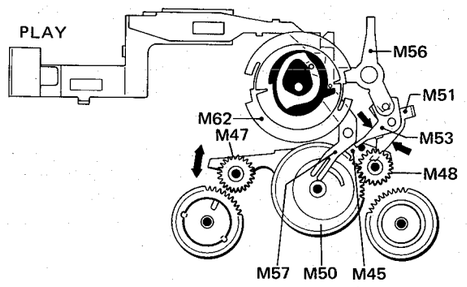
The gear unit in the intermediate shaft part of flywheel M69 is always rotating the gears M47, M48, M50, M60, M128, and is waiting for the following actions.

(1) Reel guides M122, M124 are rotated through one of the two gears M47, M48 provided in the switching lever M45, and the tape is taken up.

(2) According to the operation of trigger lever M57 and others, the shift gear M62 is once stopped, and by means of the interlocked shift lever M56 and pinch roller select slide M89, one of the pinch rollers M108, M109 is pressed against the capstan to determine the tape running direction.



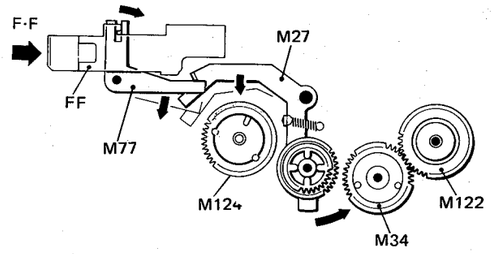




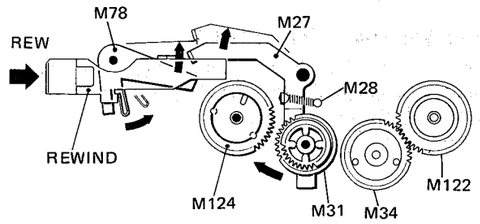
3. Fast takeup (fast feed/rewind). . . FF/REW

(1) When FF button slide M7 is pressed, the form of FF link lever M77 is changed, and the R/F changeover lever M27 is attracted by restore spring M28 until the R/F gear M31 is engaged with end detection gear M32, when the takeup reel guide M12 begins to rotate at high speed.

(2) When REW button slide M4 is pressed, the REW link lever M78 and R/F changeover lever M27 are put in action, and

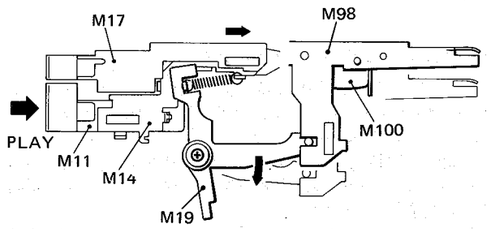


then the R/F gear M31 is engaged with reel guide M124 to start high speed rotation.



4. Playback (manual reverse) . . . see drawing for "5. Recording"

When play button slide M11 is pressed, play slide M14 co-operates, and further play relay lever M19 is actuated and head slide M98 and head M100 are moved to bring the heat M100 into tight contact with the tape. The play slide is fixed by lock slide M2, while the play button slide returns to the original position.

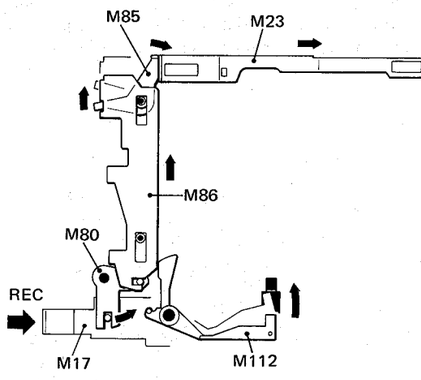


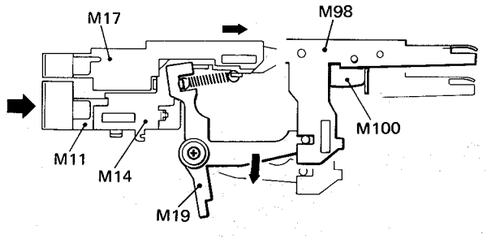
5. Recording

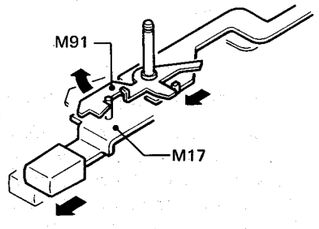
When record button slide M17 and play button slide M11 are pressed at the same time, the record button slide is locked in the record lock lever M91 in addition to the action in "4. Playback." Simultaneously, the record switch is turned on, being linked with record link levers (1) M80, (2) M86, (3) M85 and record switch slide M23.

On the other hand, as the record link slide moves, the erase head lever M112 changes its form, and the erase head is brought into tight contact with the tape.

Next, when the tape end comes, the action of "6. Automatic reverse" begins, and the record lock lever which is holding the record button slide M17 is kicked by the pinch roller select slide M89, so that the record button slide M17 returns, moves in reverse direction, and plays.

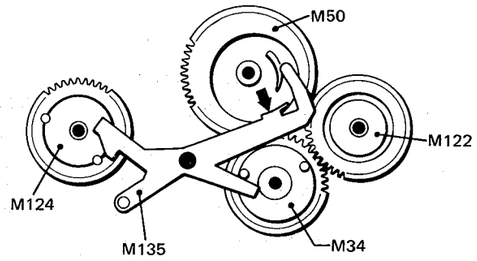


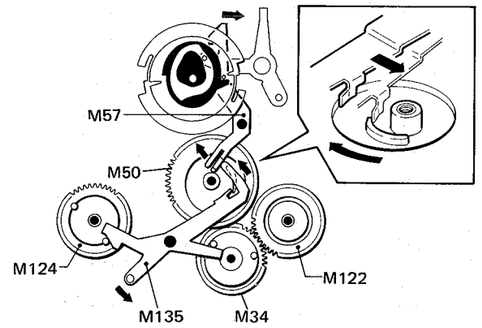




6. Automatic reverse

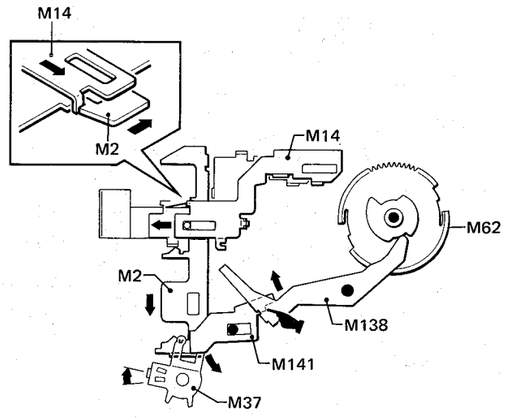
As far as the reel guide M124 is rotating, either the end sensor pressed against the felt by spring or the end sensor M34 pressed against the end sensor gear M32 continues to push the balance lever M135 to keep the protrusion in contact with the cam surface of cam gear M50, effecting reciprocal motions repeatedly, but when the reel guide stops, the balance lever M135 is set free, and the protrusion is attracted by the hit part of the cam gear. As a result, its end moves to kick the trigger lever M57, and the change drive gear M62 is rotated by one step.



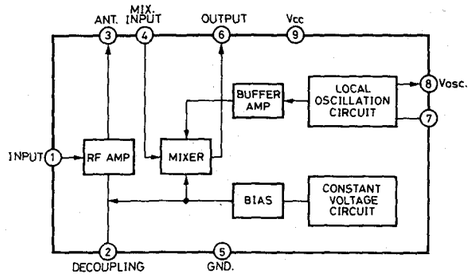


7. Automatic stop/reverse select switch

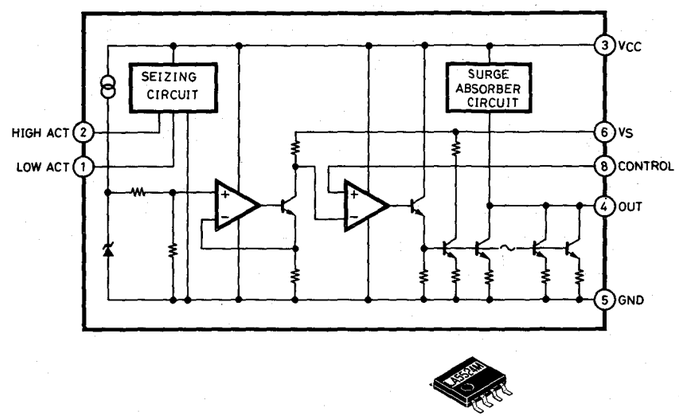
When the automatic stop/reverse select switch M37 is turned on, the automatic stop operation lever M138 is actuated by the higher side of the cam of the change drive gear M62, and the lock slide is hit and stopped by means of the select lever M141. Therefore, when located at one side of the came, automatic reverse action is effected once, and when located at the other side, the tape stops at its end.



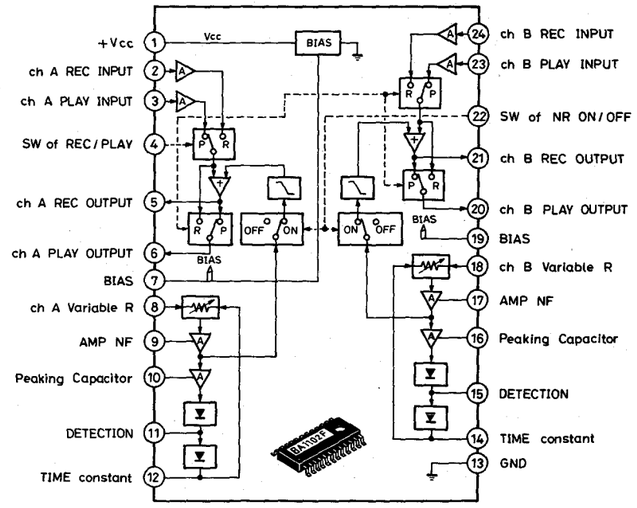
IC101 . . . TA7358F FM FRONT END



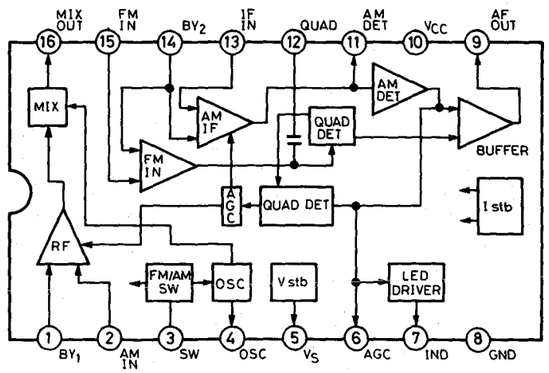
IC601 . . . LA5524M DC MOTOR SPEED CONTROL



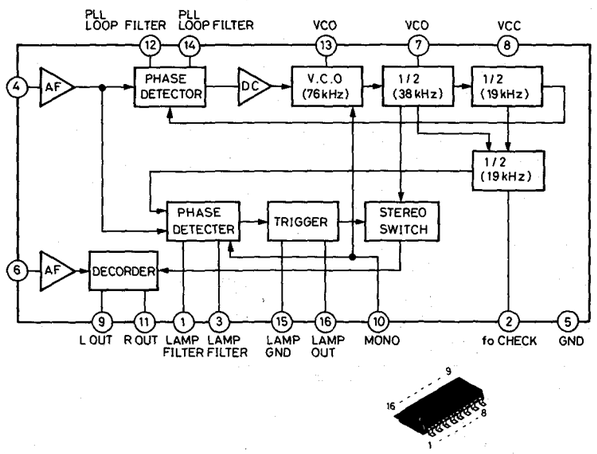
IC931 . . . BA1102F NOISE REDUCTION



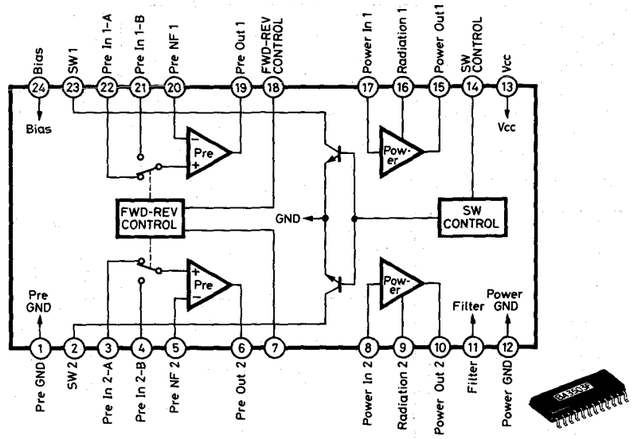
IC301 . . . TA7757F 3V FM/AM IF SYSTEM



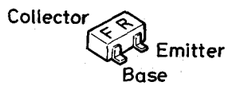
IC501 . . . BA1360F STEREO MULTIPLEX



IC901 . . . BA3503F PRE POWER AMP SYSTEM



2SA1037K



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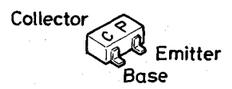
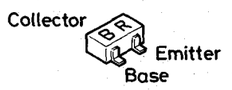
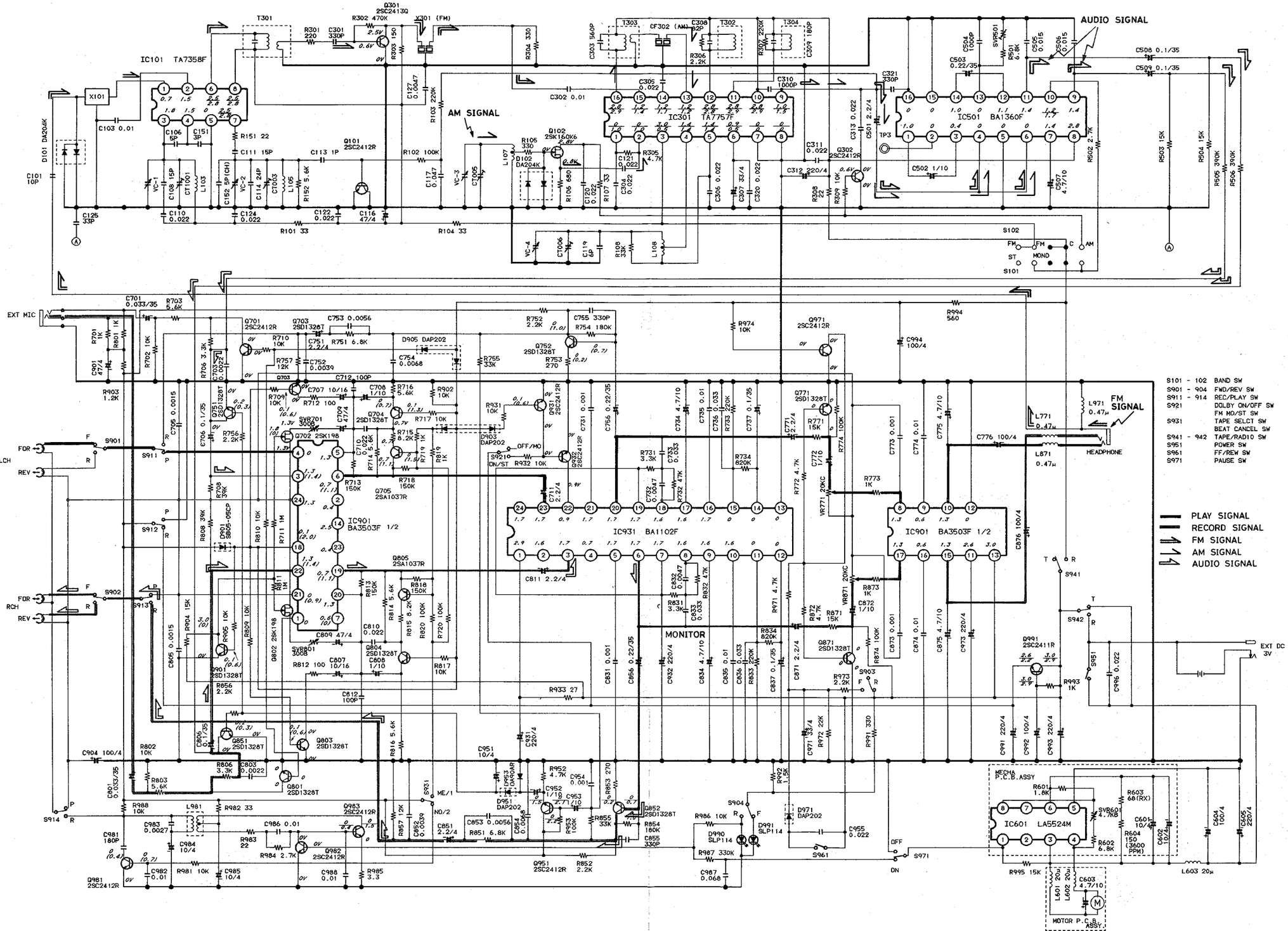


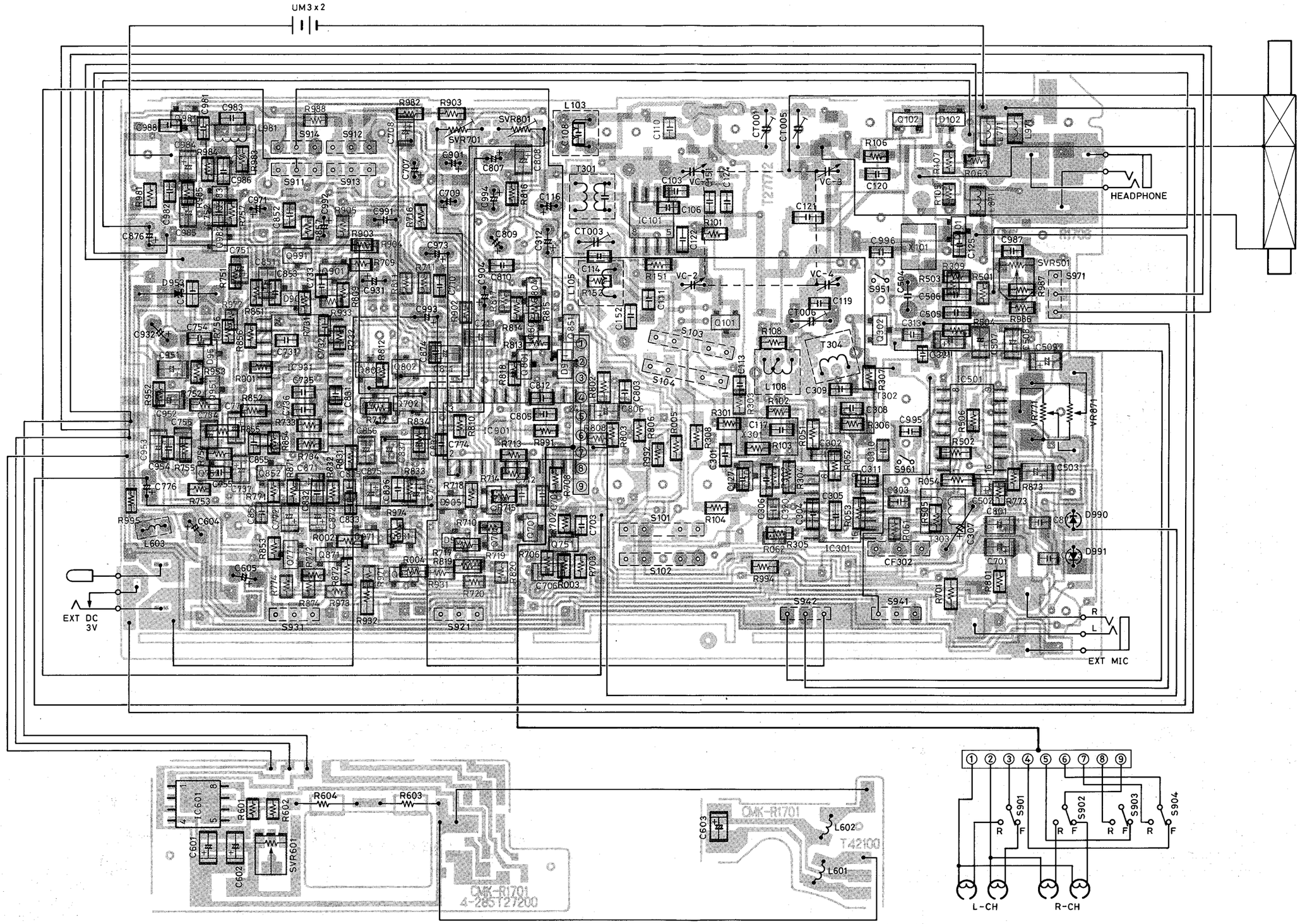
2SC2412K



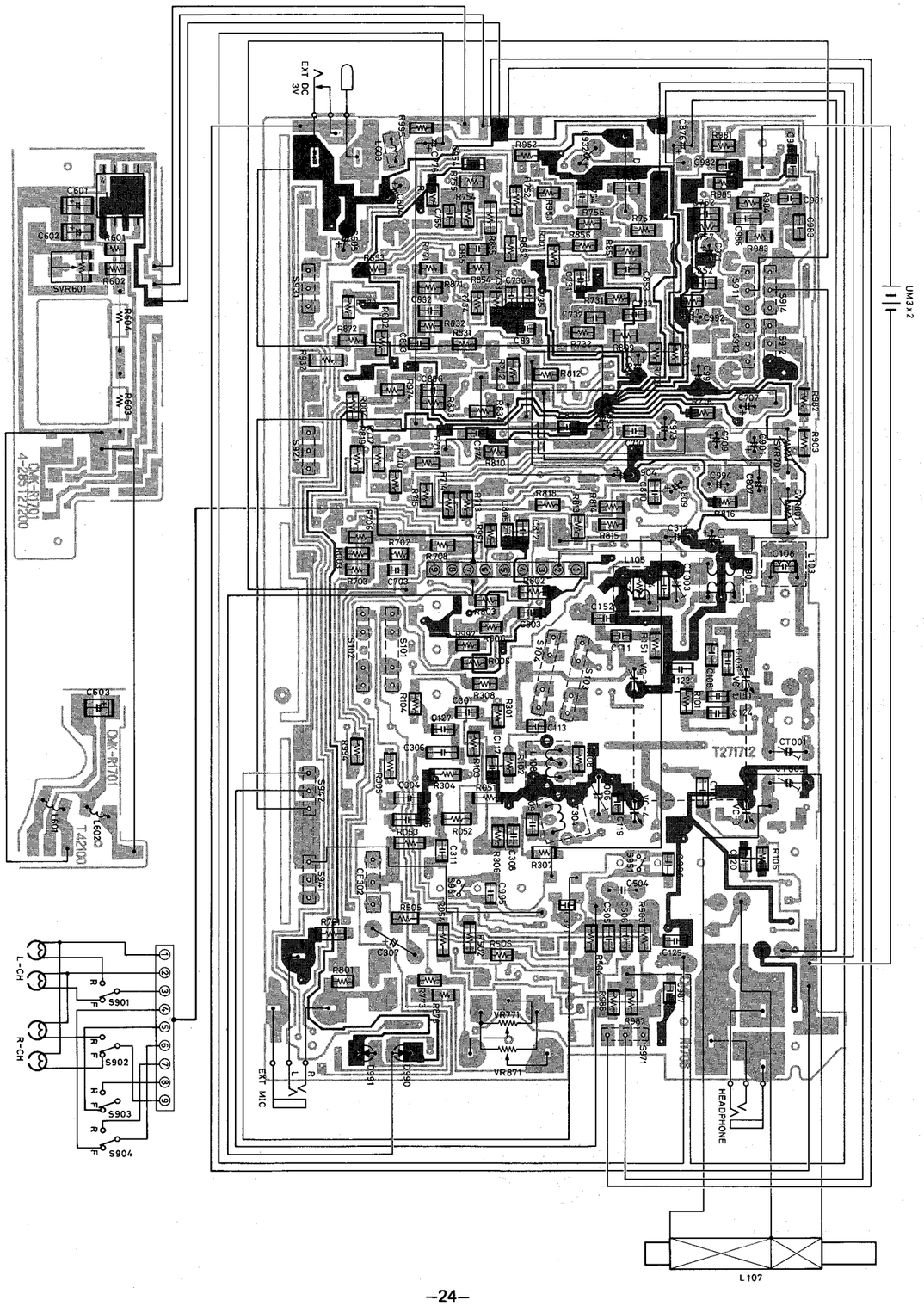
DAP202K

SCHEMATIC DIAGRAM

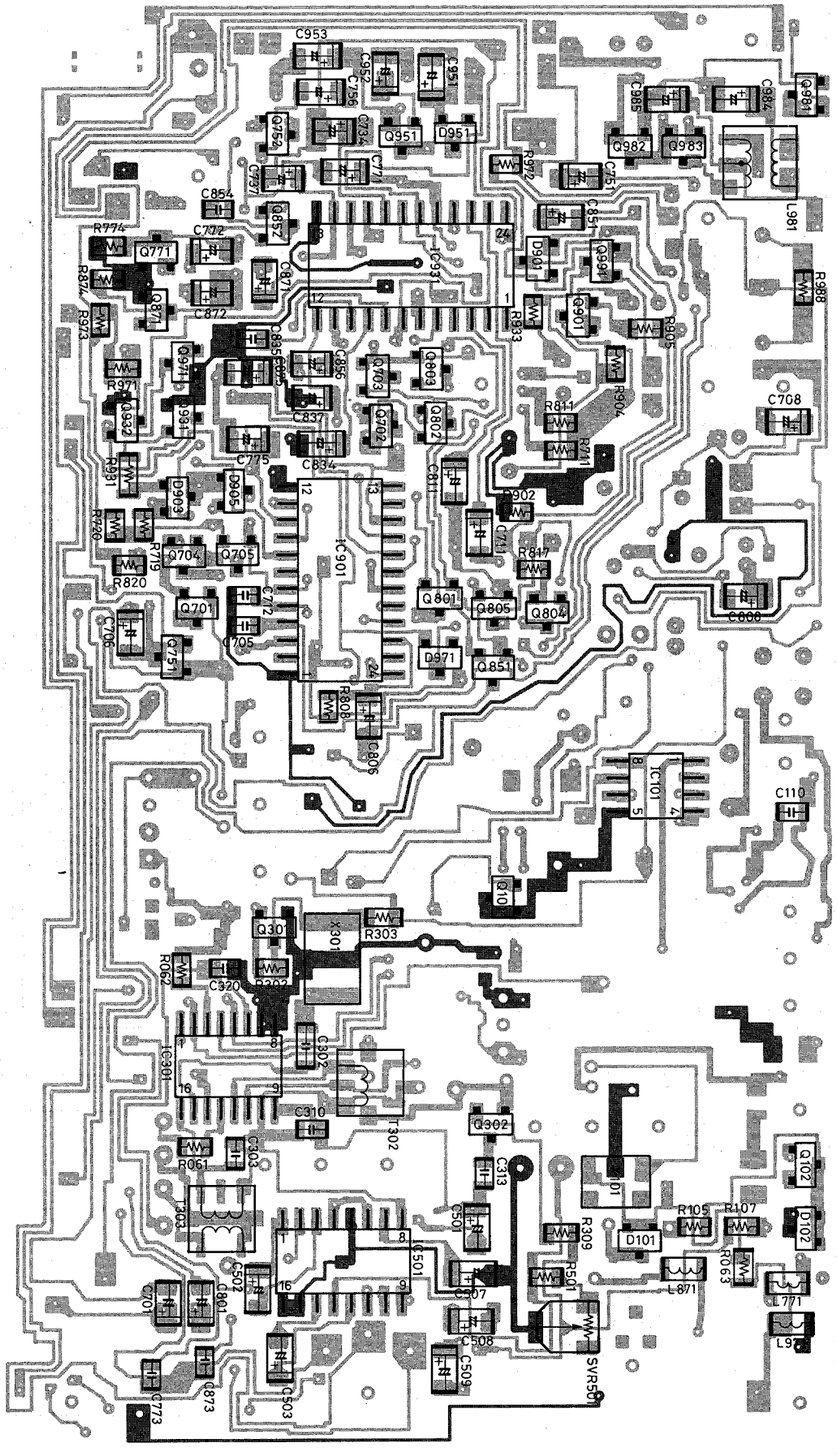



UM3 x 2
HEADPHONE
L107
EXT DC 3V
EXT MIC
L-CH
R-CH
CMK-R1701
4-285127200
T42100

MAIN PARTS SIDE



SUB PARTS SIDE



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